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**Faculty of Business Economics with seat in Košice**

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# STRATEGIC MAPPING PROCESS OF INDUSTRIAL COMPANIES

## PROCES STRATEGICKÉHO MAPOVANIA PRIEMYSELNÝCH PODNIKOV

*Jaroslava KÁDÁROVÁ – Renáta TURISOVÁ*

### **Abstract**

Article is dealing with companies' strategic maps, which are one of the tools for the successful company's strategy creation. Strategic map is based on the contemporary situation in company and it determines goals that company would be achieved in future and it determines ways, how these determined goals would be achieved. It is focused not only on financial indicators, but also to indicators in other perspectives of the Balanced Scorecard method.

### **Keywords:**

Strategic map, perspective, creation of the company's value.

### **Abstrakt**

Príspevok sa zaoberá podnikovými strategickými mapami, ktoré predstavujú nástroj pre úspešnú tvorbu podnikovej stratégie. Strategická mapa je založená na súčasnej situácii podniku a určuje ciele, ktoré by mali byť v podniku dosiahnuté a tiež spôsoby, ako dosiahnuť tieto ciele. Nie je zameraný iba na finančné ukazovatele, ale tiež aj na indikátory ostatných perspektív BSC.

### **Kľúčové slová:**

Strategická mapa, Perspektíva, Tvorba podnikovej hodnoty

## **Introduction**

In the industrial era firms created value by transforming raw materials and finished products. The economy was based on tangible assets such as land, machinery, buildings and production machinery. Enterprise was able to describe and document their business strategy through financial instruments such as balance sheet, income statement and statement of cash flows.

In the information society, businesses are increasingly using intangible assets such as customer relationships, skills and knowledge of employees, information technology and corporate culture that supports innovation, solving the problems and provide general business development.

Intangible resources are becoming the major sources of competitive advantage and their importance grows continually (Figure 1).

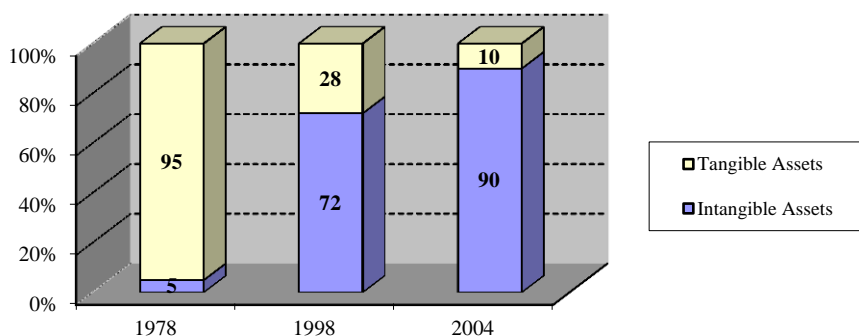


Figure 1  
**Growth of intangible assets**  
 Source: Own processing

The value of intangible resources depends on their use in business and corporate strategy. For example, growth-oriented sales company strategy requires knowledge of customers, additional sales training, new information databases and information systems, organizational structure and other commission-based remuneration system. Only some of these resources have a direct impact on the success of the strategy. The various intangible resources do not participate alone for the company results creation, but it means the interdependence of tangible and intangible resources.

## 1 Strategic map

The strategy map is a tool that gives employees a clear idea of the direction of their work in order to achieve business goals. It allows you to coordinate the work and move it to the desired business objectives. Map is a visual idea of the critical points and critical business relationships between them that affect the efficiency and effectiveness of the company.

Strategic map shows:

- goals for sales growth,
- target markets of customers with increase profitability,
- value for customers, which will lead to the growth of purchases or sales with higher margin,
- key role of innovation and excellence of products, services and processes,
- necessary investments in people and systems to create and sustain projected growth.

The strategy map has the nature of causal maps, as shows the cause – effect relation, whereby there is a specific improvement in business results, such as shortening some processes and increase employee satisfaction, which leads to customer retention and revenue growth for the company.

The strategy map shows the basic indicators for each company perspective, projected values of these indicators in the form of objectives and driving forces able to influence the values of variables.

The strategy map clearly defines the roles and responsible for implementing them. The proper selection of indicators is important, on which is linked rewarding system. Indicator must determine the action of momentum.

For most perspectives, the strategic map shows how to use their business ideas and resources, which consist of intangible assets such as corporate culture and employee knowledge to create tangible results.

The strategic map can clearly and distinctly describe in the company:

- objectives, intentions and potentials,
- indicators used to evaluate the performance and efficiency of enterprise,
- resources of strategic management.

## **2 Algorithm of strategic map creation**

The basis of the strategic map is to identify where the value is created in company. It is necessary to identify the location and cause of the values. This is possible through the allocation of factors affecting the strategy of the division factors occurs under the Porter value chain and business activities can be divided into primary and support.

To understand the value of the company in the information age it is used a balanced set of indicators. The system can quickly summarize:

- required knowledge and skills of employees,
- existing and required strategic capacity and effectiveness of business,
- the products supplied to customers,
- increasing value for company owners.

Algorithm of creation of strategic map directs from now to the future, by which is created a plan for implementation. The starting point for establishing a strategic knowledge map is the current financial situation. It is important to know the causes and variables that affect financial results. All the most important factors are recorded that determined the value of the company and identify priorities, which should focus the attention of the company. The various aspects affecting the efficiency and effectiveness of company is usually divided into four perspectives, as were designated by Kaplan and Norton in Balanced Scorecard Methodology.

The output of strategic map is the future strategic position of the company, which company wants to achieve. For its preparation it is necessary to map the layout and the company's potential for future financial performance and business efficiency. Enforcement and implementation of the strategy in a company is associated with resistance to necessary changes provoked.

Each strategic map should include the following aspects:

- Strategic objectives for at least four basic perspectives
- Strategic output indicators for all strategic objectives
- Drivers of strategic output indicators,
- Balancing of strategic output indicators and drivers for diagnostic indicators that monitor the way to achieve strategic indicators
- Chains of causal links:
  - linking corporate objectives,
  - link indicators,
  - linking indicators and their drivers.

The strategy map reflects how company wants to transform various business resources to desired outcomes. To create your own strategic maps, based on balanced indicators, companies can use the model map shown in Figure 2.

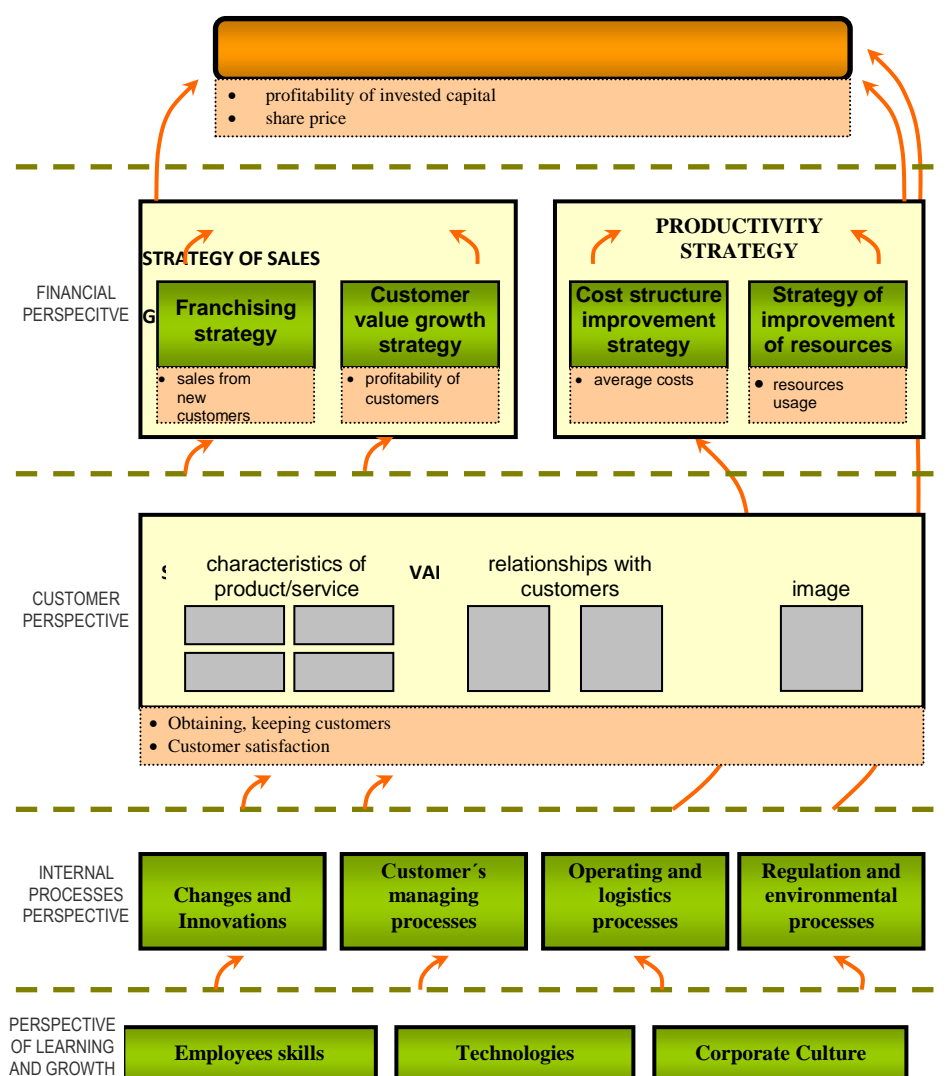


Figure 2  
The general strategy map of balanced indicators  
Source: Own processing



Sample strategic map after the adjustment can be used for different sectors of national economy, industry, insurance companies, banks, trade and business services, medical facilities, government institutions, NGOs and so on. Executives can map the strategic adjustment of the model to establish an appropriate strategic map, which will reflect the relationships in their business.

### 3 Method of creating a strategic map

The best way of creating strategic map is process away from the top down. It starts with drawing "target station" and then describes the ways and means which lead to their achievement.

As a first step, managers must review the corporate vision and values on which company is built and those who believe. Based on this information, managers can develop a strategic vision and determine what business wants to achieve. Company vision creates a clear image of the main corporate objectives, which may be as to become a leader in making a profit in a particular industry.

The strategy must define the procedure as determined vision for business, to:

**I.** The creation of **financial strategies** for increase company value for owners follows after defining the vision and company strategy. Companies can opt for one of two basic financial strategies:

- *Strategy of sales growth*, which consists of two parts:
  - *Franchising strategy*, which aims to achieve revenue associated with the growth of market share, which is achieved by creating new products, new markets and new customers.
  - *Customer value growth strategy*, which aims to achieve sales of existing products, sales and customers. The strategy focuses on creating good customer relations and increasing their confidence and loyalty to the company.
- *Productivity strategy* also consists of two parts:
  - Strategy for improving the cost structure of the enterprise by reducing direct costs and overheads.
  - Strategy of more efficient use of resources by reducing circulating and fixed assets.

In general, productivity strategy achieves the desired results in a shorter time horizon as a growth strategy. Nevertheless, the main benefit of the strategic map is to explore ways to increase the company's financial performance through revenue growth and not by reducing costs and improving resource use. Balanced use of all financial policies contributes to growth the company value.

**II.** The core of any business strategy is a **strategy customer's value creation**, which represents the sum:

- Characteristics of products and services.
- Relationships with customers.

- Corporate image.

These aspects of customer strategies define how to distinguish the company from its competitors and business relationships with target customers. Companies try to excel in one of three areas, while the other two areas are maintained within limits of the standard.

For the customer perspective, companies usually opt for one of three strategies:

- Strategy for production excellence.
- Strategy of consumer confidence.
- Product leadership strategy.

#### Variant strategies for customers value creation

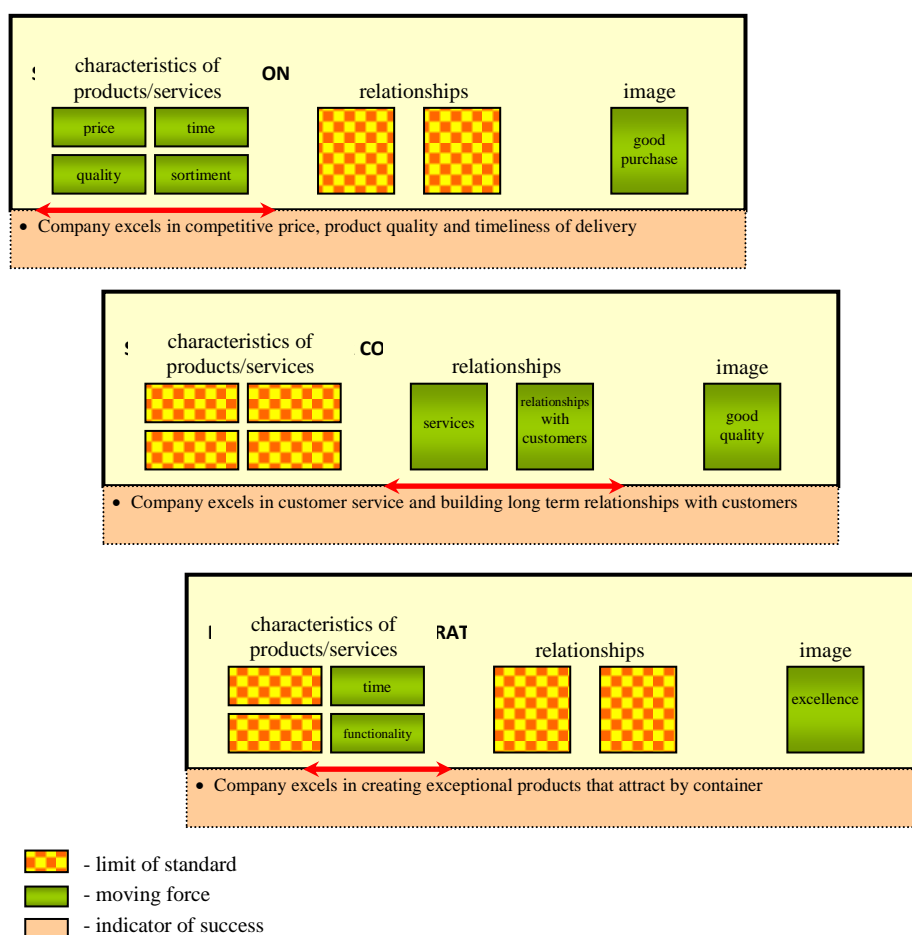


Figure 3

#### Variant strategies for customers value creation

Source: Own processing.

Companies that promote strategy of production excellence, offer products and services that are comparable to competitive products or services by price, quality and range. Offered products are delivered on time and immediately after ordering.

In implementing the strategy of creating trust with customers, companies emphasize the quality of their relationships with customers, providing after-sales service and resolve any customer problems.

Companies that decide to apply the product leadership strategy must focus on functionality, features and overall performance and effectiveness of marketed products and services.

If company has created the image of customer and financial perspective, it may proceed to define how it will create value for customers and productivity improvements designed to achieve the final objectives of the enterprise.

**III. The perspective of internal processes** records critical activities of the undertaking, which can be divided into four levels of processes:

- increasing sales through changes and innovations of products and services, penetration into new markets and new consumer segments,
- adding customer value by deepening relationships with existing customers,
- achieve production excellence by improving the management of supplier-customer relations, cost management, quality and progress of internal processes, resources and production capacity,
- create a good business position in relation to its surroundings and external interests.

Most companies which apply strategy aiming at a changes and innovations, or growth of added value for customers only evaluates the level of costs and quality of their activities and forget to evaluate changes and customer processes.

These companies do not have developed indicators for assessing the objectives, thereby causing problems in the implementation of growth strategy.

The financial benefits of improving business processes are manifested in several stages. Cost savings associated with increase production efficiency and process improvement is reflected in the short term. Sales growth due to improving relationships with customers is reflected in the medium term. And growth of innovation and change brings revenue profit growth in the long run.

**IV. The basis of each strategic map is perspective of learning and growth** that characterizes the core competencies and skills, technology and corporate culture. There is management of human resources and technology in business in order to achieve the objectives. Despite the fact that managers know the importance of this perspective generally have difficulty in defining adequate and appropriate targets.

#### **4 Benefits and weaknesses of strategic maps**

The greatest benefit of strategic maps is their ability to bring the whole business strategy. The strategic map allows identify indicators that are not strategic. Many companies create indicators by business interest groups rather

than strategic indicators. They compile a balanced system of indicators which are grouped around three main interest groups:

- owners,
- customers,
- employees.

The strategy must determine how the requirements and needs of these stakeholders should be met. Nevertheless, the way to meet the needs of individual perspectives is part of a balanced system of indicators.

Although this approach is a balanced set of indicators such as financial indicators alone, the comparison system of key performance indicators with a set of balanced indicators of strategy maps, exhibits a number of missing elements:

- Indicators for assessing customer.
- Using only a simple indicator of internal process that is focused on the initiative and not on output.
- Undefined role of information technology.

Thus composed set of indicators does not describe overall strategy and may mislead.

## Conclusion

Managers use strategic maps as a basis for a management system that allows the company to implement growth initiatives effectively and quickly. Business strategy reflects a shift from the current position to the desired but uncertain future position. Strategy in detail from several perspectives increases the success of its implementation. Company strategic map helps him see his overall strategy, integrated and systematic view. Managers recognize any gaps in the strategy and measures to correct and quicker action.

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# INTERNATIONAL COOPERATION - IMPACT OF CULTURAL DIVERSITY ON BRAND STRENGTH IN THE HOTEL INDUSTRY

*Anja DANISZEWSKI – Anabel TERNES – Ian TOWERS*

## **Abstract**

Our findings are consonant with another survey, in which hotel managers were asked why they employ people with a migration background or from other countries. The most commonly mentioned motive for this was cultural diversity, which enables creativity. From the point of view of internal communication, employing people with a migration background fosters communication between employees “because the staffs are interested in each other and want to learn more from each other, being curious about cultural differences.” It also encourages “farsightedness by staff, both in culture and politics, because they learn from each other.”

## **Keywords**

Intercultural Management, Intercultural Marketing, Diversity, Integration, Internationality.

## **Introduction**

The number of tourists visiting Berlin is a success story for the city. The number of visitors and the number of nights spent are rising on a monthly basis. Berlin alone accounts for almost 10,000,000 visitors and over 22,000,000 overnight stays annually. More than one-third of the visits to the city and overnight stays are accounted for by tourists from outside Germany, particularly from Europe (above all Britain, Italy and Spain), Russia and Asia.

As a result, the number of people employed in the hotel industry is steadily rising. According to the IHK Monitor of Skilled Employees, there is a shortage of 5,000 skilled employees in the hotel industry just in Berlin. The employment situation is also affected by the demographic change, just as are other industries. Unlike many other traditional industries, however, employing people from a migrant background or people from other countries is not a new practice in the hotel industry. Indeed, having multicultural teams has been part of the image of international hotel chains for many years. On the other hand, there are many traditional hotels whose employees are all German; one reason they prefer to employ people from the local area is in order to strengthen the local atmosphere of the hotel. To be able to continue to offer a high quality of service, more and more hotels are finding that they have no choice but to employ staff who come from a different cultural background. During interviews with experts from smaller traditional hotels, a frequent opinion was that guests like it when they feel at home, and part of that is having a German member of staff in front of you, whose native language is German and who looks like a German.

Companies and other organisations are becoming increasingly aware of the benefits of diversity. Dealing in a professional way with a mixed group of employees is becoming an important success factor in the context of the globalised economy. Diversity as a concept applies to many areas. Here, we look at the cross-cultural relationships and their management in the hotel industry. Knowledge of language and culture can open the way to reach new groups of customers and then to new markets. International and intercultural networks can lead to mutually beneficial exchanges of experiences, new ideas and strategies. Intercultural management becomes even more important in this context, as it fosters an open organisational culture based on a shared understanding of different cultural backgrounds. Empirical studies of organisational psychology have provided evidence of the advantages culturally heterogeneous firms have, as they have access to staff whose values, personal characteristics and cultural influences vary greatly. Due to this mix of characteristics, such organisations are mostly more creative and can produce innovative solutions, and generally perform better than culturally homogenous organisations. Professional qualifications, knowledge of foreign languages, countries and other cultures can be intercultural success factors.

The hotel and tourism industries are traditionally more likely to be thought of in the context of intercultural communication than other industries. A large proportion of guests expect the usual standard of service in a hotel, but with a local atmosphere based on the hotel's geographic location. The mere presence of guests in hotels makes an isolation of cultural groups impossible and can lead to an awareness of the existence of other cultures.

The following research concentrates on the views of German guests and on German hotels. The research topic is highly relevant, given the demographic change and an awareness that the shortage in skilled staff and management cannot be met only by locals, and also given the constantly recurring debates about xenophobia set against the background of German history. Consequently, the hotel industry in Germany is an interesting research subject in the areas of intercultural cooperation and intercultural management. It could be a pioneer of intercultural management for other industries. Indeed, it could act as a kind of model, an example for other organisations and firms for how different cultures can work together quite naturally and in doing so take advantage of their differences and express them in a form of productive diversity.

## **1 Theory**

### **Cultural Differences**

A precondition for distinguishing between cultures is renouncing premature rushes to judgement, i.e. being aware of cultural relativism. The French anthropologist Claude Levi-Strauss says, "Cultural relativism affirms that one culture has no absolute criteria for judging the activities of another culture as 'low' or 'noble'. However, every culture can and should apply such

judgements to its own activities, because its members are actors as well as observers" .

Cultural differences manifest themselves through symbols, heroes, rituals and values. Symbols are the words, gestures, images or objects of a cultural group and represent the most superficial level manifestation. Heroes are people whose attributes are highly thought of within a cultural group; they may be fictional characters like Barbie or Batman. Rituals are the collective and socially necessary activities within a cultural group, such as greetings and religious ceremonies. At the core of a culture lie values, i.e. a general tendency to prefer certain conditions to others. Values are emotions with a range from positive to negative range; here we are dealing with opposites and antitheses, like “good – evil”, immoral – moral”, “irrational – rational” and “logical – illogical”.

### **Intercultural Management**

Intercultural management is a development of general management, as it includes some additional competencies.

Intercultural management is the targeted design, management and development of organisational systems and processes in a context that is characterised by the coming together of at least two different cultures.

Intercultural management is management that crosses cultural boundaries, i.e. it must take into account cultural and intercultural characteristics.

It is important to recognise and analyse significant intercultural factors. Individuals' behaviour is influenced by not only national cultures, but also regional and area cultures. Personal characteristics play a role in addition to these aspects.

As intercultural management becomes ever more important, Intercultural competence is becoming even more significant since it enables effective ways of behaving towards and with other cultures.

### **Intercultural Competence**

Thomas, Kammhuber and Layes define intercultural competence as “the ability to appreciate cultural conditions and factors of influence within oneself and in others in the acts of perceiving, judging, feeling and taking action; to acknowledge and respect them; and to put them to productive use in terms of mutual adaptation, in tolerance where there are incompatibilities, as well as in the development of synergistic forms of living together and world orientation.”

Managers must generally have at their disposal expertise, process skills and leadership skills, coupled with social skills. At the same time, they must be skilled in adapting to new situations , which means being able to use their core competencies in an intercultural environment and being able to adapt them to different cultures and individuals. This is made possible by having an understanding of culture generally, and more specifically by knowing about different cultures and intercultural relationships.



These skills can then be brought into action when they form the basis of intercultural decision-making and management competencies.

### **Intercultural Marketing**

Expanding business onto the international market calls for a change in perspective. Changing the method of distribution, setting a price appropriate to the market and simply providing translations are no longer sufficient.

Intercultural marketing concentrates on the similarities with a target group that are based on ethnicity and culture. This includes the culturally specific impact of symbols, colours and tastes, as well as the interpretation of words and gestures – an impact that is often unconscious.

To be successful on the market requires dealing with cultural particularities. Only a manager who knows and understands the cultural background is in a position to shape product marketing in a culturally appropriate way, and in this way be able to obtain a sustainable competitive advantage.

### **Intercultural Affairs and Management**

Two opposing positions can be identified in the field of “culture and management”, which has become increasingly important in recent years: the universalist and the culturist positions. Universalists insist on a culture-free thesis which states that management principles are valid at all times and in all places, regardless of cultural conditions. On the other hand, culturists argue that as cultural conditions, values and motivations differ, so do the appropriate management principles. Underlying both points of view is the argument that cultural differences make the global standardisation of management tools and the development of transnational competitive advantage more difficult. There has been significant change and development of different perspectives in this discussion over the years. In recent years, the view that cultural diversity in firms can lead to competitive advantage has been gaining ground.

## **2 Results**

340 people participated in the study, which was carried out online. The survey instrument was pretested, when a test group evaluated, completed and corrected the questions. Almost 90% of the respondents were aged between 20 and 30.

The gender split was not equal: 55% of respondents were female, 34% were male, while 11% provided no information.

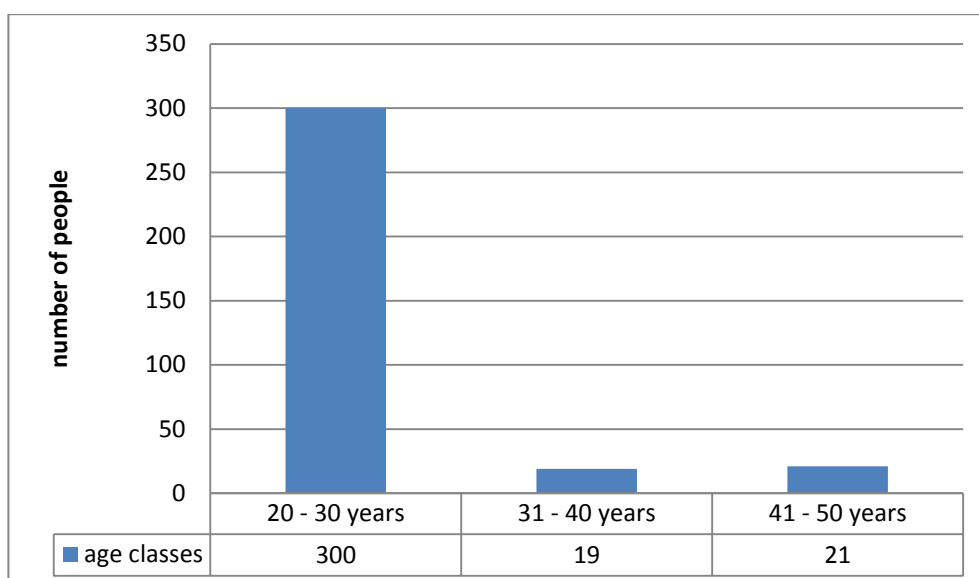


Figure 1:  
**Age groups of the participants**

The highest level of education of 56% of the respondents was the university entrance level, 23% had a bachelor degree, almost 9% a master's degree and the remaining respondents had an MBA or PhD degree.

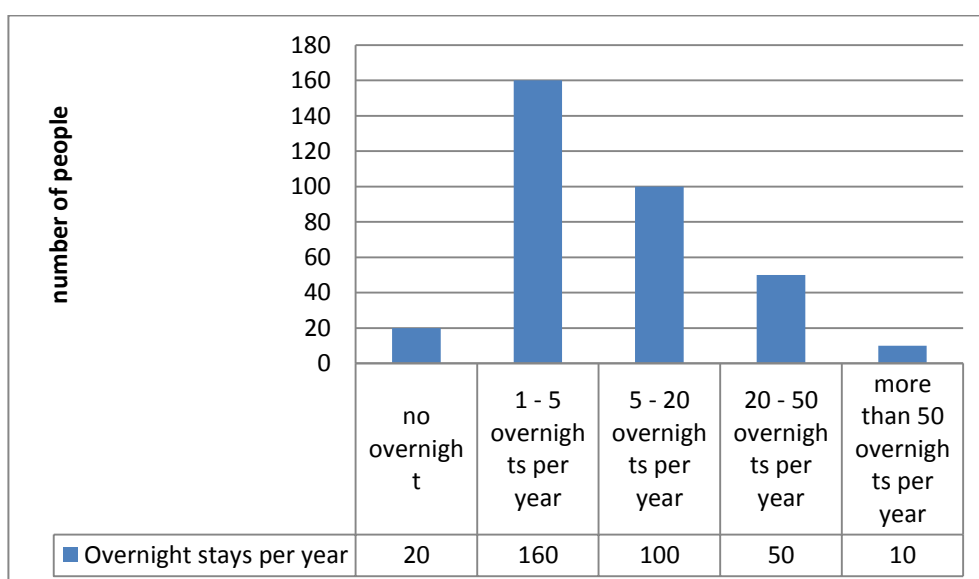


Figure 2  
**Overnight stays per year**

The number of overnight stays in German hotels was very low. 50% of respondents indicated that they had spent only 1-5 nights in German hotels. 20 respondents had spent no nights in hotels for business reasons, which is related to the characteristics of the respondents - most are students and are not employed. Those few who were doctoral students and other older respondents indicated they spent between 20-50 nights or even over 50 nights per year in German hotels on business travel.

A closer analysis of the completed responses shows that these responses are linked to the characteristics of the respondents. The younger age groups indicated they spent no or very few nights in hotels in Germany, which is supported by the fact that only one third of Germans (according to the Forschungsgemeinschaft Urlaub und Reisen e.V.) spend their vacations in Germany. That the older age groups spend more nights in German hotels is usually caused by their jobs, because the number of nights they spend in German hotels was in most cases the number they spend for their jobs.

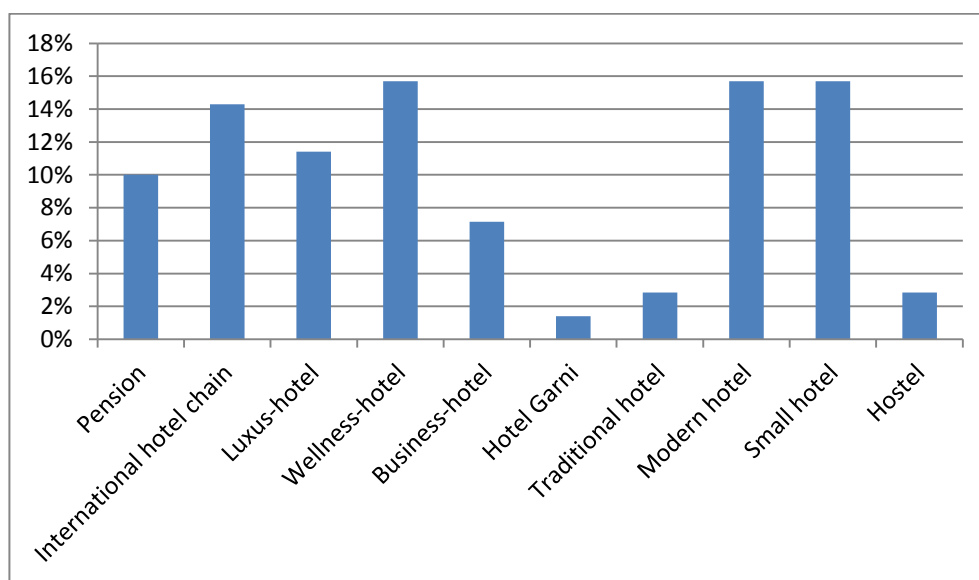


Figure 3  
**Preferred Hotel Types**

The most popular type of hotel, with 18.5% of all votes, was the modern hotel, closely followed by wellness hotels and small hotels (15.5% of votes each). International hotel chains were in third place with 14.3%. Interestingly older and more experienced individuals mainly prefer business hotels and international hotel chains, which is related to the number of business travel related overnight stays.

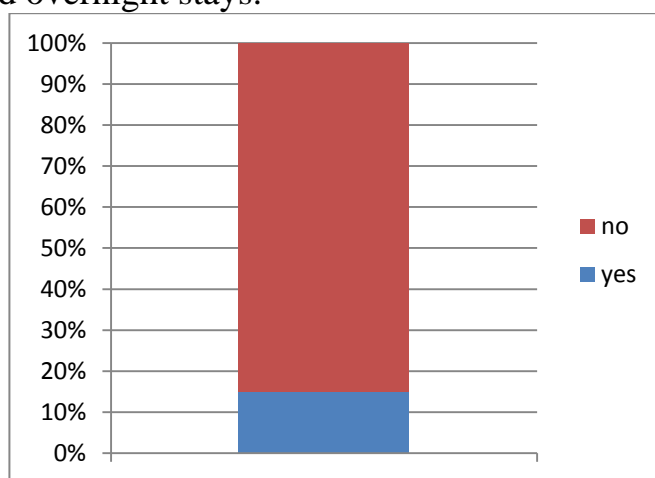


Figure 4  
**Relevance of Cultural Affiliation of Employees**

The survey results show that only 15% of respondents find it important that the staff in the hotel in Germany where they are staying should belong to a particular culture. The reasons they gave for their answer include “simpler communication”, a “more pleasant” “almost like home feeling” through the presence of staff from the same culture. An additional argument was that “mixed personnel”, characterised by a “mix of cultures” seems livelier and more creative and is a “sign of internationality”.

The majority who states that the culture of the staff members is irrelevant justified this with the fact that different cultures and ethnicities in the hotel industry are varied and have a positive impact, but do not have a direct effect on “service quality”, “friendliness” and “attentiveness”, which are the most relevant and desirable attributes of hotel staff.

What respondents felt about the areas of responsibility of international employees is noteworthy. International staff awakens positive feelings in 95% of respondents. The same percentage views it as something negative if international staff is put into areas of low responsibility. Additionally, all respondents agreed that there is a positive effect when staff who has an international and intercultural background are active in all areas of a hotel.

Only 4% of respondents wish to have services from staff from a specific culture (by which the respondent’s own culture was meant). Worth mentioning in this context is however a point that was made numerous times: in areas where there is direct contact with guests (the front office, for example) interculturality and the ability to speak several languages are neither necessary nor desirable from a guest point of view, but do have benefits.

These findings were also made on the hotel side during the study: many managers reported that there is a great demand for internationality for direct contact with customers, and that this is therefore taken into consideration during the recruitment process. International members of staff are seen as better people to deal with by guests who come from the same country. International staff in other departments, such as service, is also viewed as ideal for taking care of international guests.

20% of respondents hoped to deal with staff who spoke the same language. The other respondents viewed this as a positive factor, but not as a must. Almost 90% of respondents were against having a quota for a balanced mix of local and foreign employees. This reflects the overall complexity of the theme, because the majority was of the opinion that quotas not only prevent an evaluation of the qualifications, competencies and achievements of an

individual, but are also just oriented on inflexible numbers and legal requirements.

The most important criterion when making hotel reservations abroad for 120 of the respondents was the “location”; in second place, with 100 votes, was “price”. Interestingly, “culture” was in third place - this meant an orientation to local values, traditions, culture and language) – it received 20 more votes than “stars” and “reviews”.

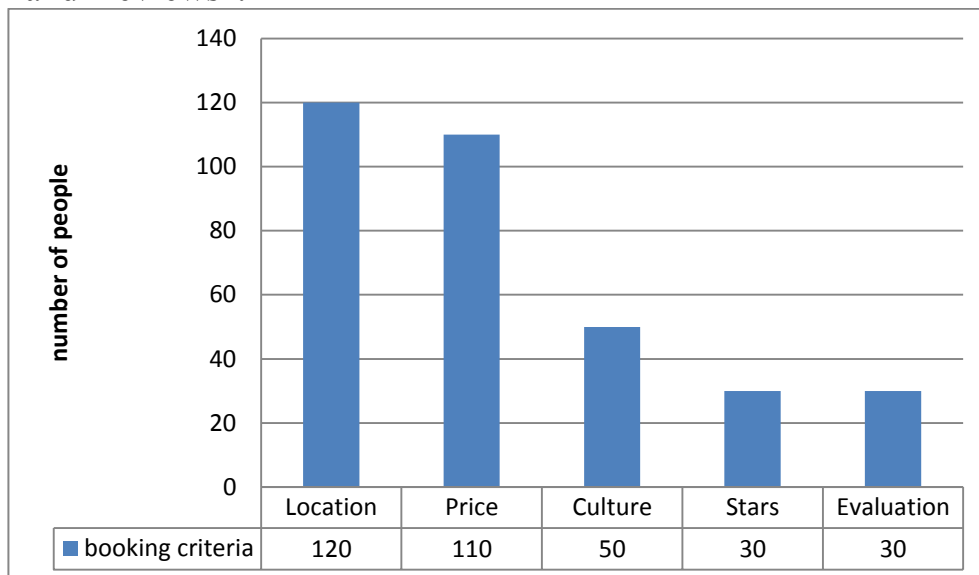


Figure 5  
**Booking Criteria**

Interestingly, the final survey questions clearly identified the effect of international staff. Although nationality and interculturality were not seen as must-haves in the hotel industry, the majority of respondents agreed on the positive effect of international staff.

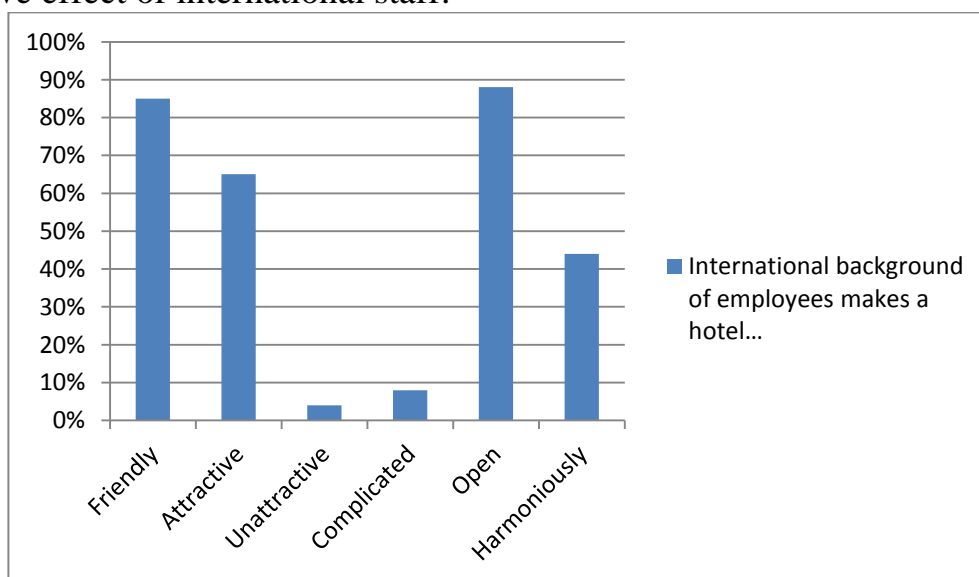


Figure 6  
**Attractiveness of the International Background of Employees at a Hotel**

The results of the survey show that staff with an international background makes a hotel more open, friendly, attractive and harmonious.

The reasons provided include “openness” and “tolerance”, which should be the “norm” today. Origin, language and culture do not have a direct impact on service quality, but heterogeneous groups are generally more successful and livelier; they promote integration, improve the hotel’s image and allow the guest to have a warm feeling of security.

### **3 Conclusion and Discussion**

Our findings are consonant with another survey, in which hotel managers were asked why they employ people with a migration background or from other countries. The most commonly mentioned motive for this was cultural diversity, which enables creativity.

From the point of view of internal communication, employing people with a migration background fosters communication between employees “because the staffs are interested in each other and want to learn more from each other, being curious about cultural differences.” It also encourages “farsightedness by staff, both in culture and politics, because they learn from each other.”

The best mottos for hoteliers from Berlin, according to Willy Weiland, President DEHOGA Berlin, are: “Find your market segment and meet the expectations of your guests” and “A hotel needs a face.”

Real interculturality in its teams can lead to a clear competitive advantage for a hotel in a multifaceted competitive arena, where not only the increasing number of hotels but also the presence of well-known and established hotels and hotel chains represent a major challenge.

Some hotels have already put this into practice. Their publicity specifically features an international team as a symbol for internationality, openness and harmonious cooperation, as well as to show Corporate Social Responsibility in practice. Other hotels primarily target a distinct customer group and so prefer to employ people from particular cultures.

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# EVALUATION OF THE EFFICIENCY OF ELEARNING FROM THE PILOT SURVEY AND THE POSSIBILITIES TO INCREASE ITS EFFECTIVITY

## HODNOTENIE EFEKTÍVNOSTI VYUŽÍVANIA ELEARNINGU NA ZÁKLADE PILOTNÉHO PRIESKUMU A MOŽNOSTI JEHO ZEFEKTÍVNENIA

*Eva LITAVCOVÁ - Martin ROVNÁK - Ján SEMAN - Tadeáš LITAVEC*

### **Abstract**

In January 2012 the e-learning environment for Faculty of Management of Presov University based on LMS Moodle was installed as part of an internal research project Gama/2011/9. The pilot lesson, which was the first one put into operation in this new environment, was the Statistics. In this article, we propose positive acceptance of e-learning by students in pilot phase of the project and suggest the requirements to improve the e-learning. It turned out that there is a significant association between the use of e-learning, requirements for its improvement and the understanding of the curriculum.

### **Key words**

e-learning, Moodle, pilot survey, software Statistica

### **Introduction**

In recent years, e-learning has become a normal part of higher education. Although for e-learning we could consider all instructions delivered electronically via the Internet, Intranets, or multimedia platforms, “e-learning is primarily identified with web-based learning.” (Hall, 2003). At the beginning of the first decade of the third millennium was e-learning massively deployed. They were also preferred research projects with this focus. In this times Faculty of Management of Presov University in Presov (next FM PU) does not exist in the current legal form, and until last year has not built own e-learning environment. This does not mean that teachers of FM PU did not use e-learning. Some of them used e-learning from other faculties of PU based on personal contacts. They realize that e-learning is one of the new attractive media for mediation curriculum. „New media does meet all the criteria of attractiveness in a marketing sense ... and young people (target group of faculties) have a positive opinion about them.“ (Ferencová, 2012, p. 3). At a time when reducing the number of contact hours is essential intensive preparation and availability of quality educational materials for self-study, so that by reducing of number of contact hours quality of the graduate will be not compromised. The issue of quality control of education is comprehensive and complex. According to Jenčová (2008) „quality is generally understood as the ability to meet the requirements, expectations, meet the needs of all involved partners of school mainly students, customers of graduates, primarily focuses on processes at the

school, which is obviously the most important one for which the school was established, the process of purposeful - learning process.” E-learning can contribute large extent to the quality of teaching. E-learning environment allows teachers to easily make available their course materials, communicate separately with students and monitor academic performance, without any special knowledge of creating dynamic web pages. These skills are implemented in a support e-learning environment. On the other hand, the implementation of the e-learning course forces teachers to reflect on its effectiveness. “The introduction and successful adoption of new technology, particularly the e-learning has created an interest among researchers because the technology would lead to the modification of traditional classroom teaching.” (Hafizah, Idris 2009). For example, Cristina Pop (2012) focuses on a “list of selected quality criteria for describing, characterizing and selecting e-learning platform. These criteria were designed based on e-learning standards”. She also “propose a mathematical model to determine the probability that a student uses an e-learning platform based on the factors (criteria) that determine the quality of the platform and the socio-demographic variables of the student”. Approach to creating e-learning course has to be different for the combination of e-learning with traditional present teaching and for the pure form of distance learning. James and Roger (2004) provide “a detailed example of one option for using online learning units within a traditional college course.” They note that “as more universities or state governments enter into partnerships with IT training vendors, educators in other institutions may find this useful as they face the issue of how to utilize these newly available online resources.” In terms of our teaching subject are interesting findings of Figini and Guidici (2008), who “supply a measure of the relative importance of the exercises (test) at the end of each training unit; to build predictive models of student’s performance and finally to personalize the e-learning platform, using nonparametric statistical methods, generalized linear models and generalized additive models.

## **1. Hypotheses**

In terms of solving an internal research project namely Gama/2011/9 in January 2012 was installed own e-learning environment on FM PU-based on LMS Moodle. The pilot lecture, which was first put into operation in this new environment was Statistics. The content of the lecture is a basic statistics course which includes, within the testing of hypotheses, one and two sample analysis of parameters of normal distribution, nonparametric tests, correlation and regression analysis. Within lectures students also learn how the discussed statistics tests can be done using software Statistica. Teaching takes place in first year of study in first degree of study in presence form. The volume of the curriculum is in proportion to the number of hours of attendance rather large and therefore the students have to be maximal busy and concentrated during the

hours. Moreover, there is devoted minimal time to software Statistica in seminars. Of those reasons great emphasis is placed on regular homework of students which is controlled during the semester. E-learning has been implemented, in addition to traditional forms of teaching, in 10 groups of students. These groups were given a questionnaire to fill, which we wanted to determine the acceptance of e-learning. Our next goal was to determine opinion on Statistica software package. At the end of the examination period, we have compared the academic performance of students with e-learning method, with the results of students without it. To evaluate the results, we used the relevant statistical methods. We have verified these research hypotheses:

**H<sub>1</sub>:** Students adopt e-learning positively.

**H<sub>2</sub>:** There exists a significant association between the use of e-learning, requirements to improve the e-learning modul and understanding of the curriculum by students.

**H<sub>3</sub>:** There exists a significant association between captivation of the program Statistica and coping of program Statistica.

**H<sub>4</sub>:** There exists a significant gender differences in captivation of the program Statistica.

**H<sub>5</sub>:** Students who use e-learning to prepare achieve better academic results.

## 2. Data and results

During the survey, we obtained data from 105 first-year students who filled out submitted questionnaire. The following tables show the frequency distribution of responses to the questions on the questionnaire.

Tab. 1

**Complies you use the web site with moodle on Statistics seminars? (q1)**

definitely yes	39	37.14%
rather yes	44	41.90%
it doesn't bother me	11	10.48%
rather no	10	9.52%
certainly not	1	0.95%

Most of the students, 79%, expressed a positive attitude.

Students solve five tasks of homework after each seminar. On the e-learning site, there are exemplify solved examples and the set of exercises to practice at the end of each training unit. The following question linked to this situation.

Tab. 2

**Did you use the website with moodle to solve your homework? (q2)**

yes	68	64.76%
no	37	35.24%

Since it was a pilot project and not all topics are on the e-learning website from the beginning to details, it makes sense another question.

Tab. 3

**Would you like to be added new examples to the page with moodle to those parts in which they are not yet listed? (q3)**

definitely yes	63	60.00%
rather yes	29	27.62%
it doesn't bother me	10	9.52%
rather no	2	1.90%
certainly not	1	0.95%

So, up to 87.6% of students require improvements of the site.

Next question serve to determine the extent to which the site with moodle is helpful for the students.

Tab. 4

**Does site with moodle help you understand the subject matter? (q4)**

yes	32	30.48%
yes, but not always	57	54.29%
no	8	7.62%
I never use it	8	7.62%

Most of the students, 84.8%, expressed a positive attitude.

Given the high Representation of positive responses to questions  $q1$  to  $q4$ , we can say that hypothesis  $H_1$  is confirmed.

When testing relationships between answers to the above questions are almost all pairs, with one exception, showed significant associations (Table 5). Due to the ordinal or nominal nature of the values of the variables we have tested using the chi-square test. In order to comply with the assumption about minimal value of expected cell frequency in the contingency table, we have merged similar variable values.

Tab. 5

## Associations between statements

questions	$\chi^2$ test	d.f.	p
$q1 \sim q2$	5.063	3	0.1673
$q1 \sim q3$	24.599	6	0.0004
$q1 \sim q4$	27.373	6	0.0001
$q2 \sim q3$	14.808	2	0.0006
$q2 \sim q4$	8.479	2	0.0144
$q3 \sim q4$	14.676	4	0.0054

From the Table 5 and with respect to the formulation of questions  $q2$ ,  $q3$  and  $q4$  can be argued that there is a significant association between the use of e-learning, requirements to improve of the e-learning module and understanding of the curriculum by students. Hypothesis  $H_2$  is confirmed.

Because minimal time remain for the software Statistica within seminary hours we were interested in how software "Statistica" captivate the students. Us interested whether they think can handle required analysis in software based on their own individual training. Next follow graph with frequency distribution of responses to this two questions.

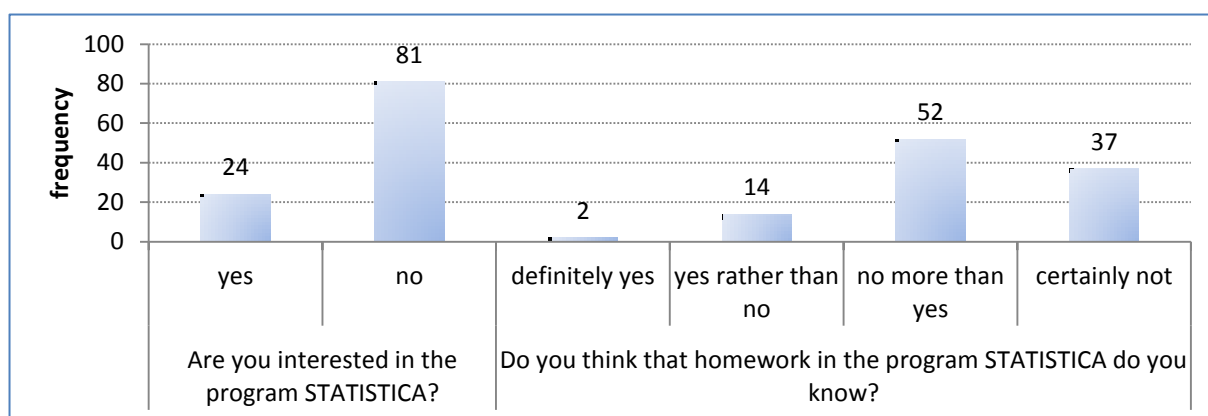


Fig. 1

## Captivation by the program "STATISTICA"

Do you think that you would succeed to do your homework in the program STATISTICA?

Only 22.9% of students are fascinated by the software Statistica and only 15.2% of students think they can handle the analysis in software Statistica. We were interested in how extent interest and coping are interrelated. These two issues are in a significant relation ( $\chi^2=24.064$ ; d.f.=2;  $p=0.00001$ ), the hypothesis  $H_3$  is confirmed. 45.8% of those who are interested in software, believe that can handle the analysis in this software. Up 93.8% of those whose were not interested in software, think that the analysis can not handle. We found the answer to this first question is related to gender ( $\chi^2=3.343$ ; d.f.=1;

$p=0.0674$ ), the hypothesis **H<sub>4</sub>** is confirmed at significance level  $\alpha=0.1$ . Up 38.1% of boys and only 19.3% of girls are interested in the software Statistica. We have compared the academic performance of students who had only the classic form of education, with those who have the e-learning in addition. There was 75 students in the first group and they have achieved 2.28 grade average. Grade average in the second group with 108 students was 2.31. The difference between the learning outcomes of this two groups is not statistically significant (Mann-Whitney U test: adjusted  $Z=0.712$ ;  $p=0.477$ ). Hypothesis **H<sub>5</sub>** is not confirmed. This could be explained so that all tutor of statistics do their best to make students understand the curriculum and added value by e-learning was not subject to student's examination.

## Conclusion

The project, which has led to the introduction of e-learning on FM PU and to the creation of a pilot e-learning module of learning object Statistics convinced us of the usefulness of this form of teaching. Students have adopted e-learning very positively. It has been shown that there is a link between the use of e-learning, requirements to improve the e-learning modul and understanding of the curriculum by students. Statistica software was not on the e-learning website in the pilot phase adequately supported, which is reflected in the small proportion of students who think they can handle it. Here we see a way to improve our e-learning modul. As the capabilities of Moodle on our website are not fully utilized, so, there is opportunity for improvement. It is necessary to create more space for communication and personalization on this site, so the gifted students have opportunity to prove themselves and to demonstrate what they achieved thanks to web sites in comparison of what the syllabus requires.

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# FACTORS AFFECTING BUSINESS PERFORMANCE

## FAKTORY OVPLYŇUJÚCE VÝKONNOSŤ PODNIKU

*Stela BESLEROVÁ*

### Abstract

To business performance and related indicators of performance measurement is nowadays paid attention both in literature and in business practice. There are many indicators which are used to measure the performance of the enterprise, but the question remains, which are the most suitable and which the best reflect the real state of monitored company. Part of the performance evaluation is also the identification of important factors, both financial and non-financial, that affect the performance itself. By identification of these indicators the necessary actions can be introduced in the company, which may lead to increase in overall performance and prosperity of monitored company.

**Keywords:** Performance, EVA, MVA

### Abstrakt

Výkonnosti podniku a súvisiacim ukazovateľom merania výkonnosti sa v dnešnej dobe venuje široká pozornosť tak v literatúre ako aj v podnikateľskej praxi. Existuje množstvo ukazovateľov, ktoré sa pri využívajú na meranie výkonnosti podniku, otázkou však ostáva, ktoré sú tie najvhodnejšie a ktoré najlepšie odzrkadľujú skutočný stav sledovanej spoločnosti. Súčasťou hodnotenia výkonnosti je aj identifikácia významných faktorov, tak finančných ako aj nefinančných, ktoré na samotnú výkonnosť vplývajú. Identifikáciou týchto ukazovateľov je možné zaviesť v podniku potrebné opatrenia, ktoré následne môžu viesť k zvýšeniu celkovej výkonnosti a prosperity sledovanej spoločnosti.

**Kľúčové slová:** Výkonnosť, EVA, MVA

### Introduction

Performance and actual performance measurement is nowadays increasingly used in business practice and is an integral part of business. In general, the company is valued as performing when it reached the planned financial results. In current practice, companies recognize that performance evaluation based on revenues or profits is not enough and you need to track prospects of a business, looking to the future. That is the main reason why companies are moving away from the use of traditional methods to the modern ones. An integral part is also the definition of the various factors that affect the performance and determination of their overall impact. The aim of this paper is to present factors affecting the performance of the enterprise, based on published studies.



## 1 Evaluation of business performance

One of the main tasks of the company is to transform inputs into outputs, which in current practice represents a number of a large number of processes and activities. The firm and its transformation process affect numerous factors that significantly affect the results. With the concept of performance we encounter in everyday life and understanding in various fields differs, so it is necessary at the introduction to explain the understanding of the term.

### Concept of business performance

ISO standards use the term performance quite often, but do not define it directly. European Foundation for Quality Management (EFQM) defines performance as "the degree of results achievement by individuals, groups, organizations and processes" (Nenadál, 2001). According to Ľ. Lesáková business performance is the company's ability to achieve the desired effects or outcomes, and if possible in measurable units. This argument raises the question of what are the desired outcomes and how to measure their fulfillment. According to Wagner, the performance is a characteristic that describes the way in which the studied object performs some activity, compared to the reference method of conducting this activity. The interpretation of this characteristic assumes an ability to compare the phenomenon under examination and a reference from the perspective of determined range of criteria.

Among practitioners and literature there are constantly ongoing discussions and comments on the choice of the most appropriate management concept and measurement of business performance. Decision-making takes place between so called **classical (traditional) indicators** (EAT, EBT, ROE, ROA, EPS, ...) and **modern indicators** (EVA, CFROI, BSC, CVA, ...).

Historical perspective on performance measurement shows the evolution of the views from measuring profit margins and earnings growth to measuring return on invested capital up to modern concepts, which are based on the creation of value for the owners. Development of used indicators depending on the time is shown in Table 1, which shows the transition from traditional accounting figures to parameters where performance is based on the creation of value for the owners.

Table 1

#### Development financial performance indicators of companies

1. generation	2. generation	3. generation	4. generation
Profit margin	Profit growth	Return on capital (ROA, ROE, ROI)	Value creation for owners
Profit/Sales	Profit maximization	Profit/Invested capital	EVA, CFROI ...

Source: PAVELKOVÁ, D. – KNÁPKOVÁ, A. 2005. *Výkonnosť podniku z pohľadu finančného manažéra*. 1. vyd. Praha : Linde nakladatelství, s.r.o., 2005. s 13. ISBN 80-86131-63-7

As can be seen in the table above, of all entities involved in company the most preferred are owners. Reason is very simple. The owners are the ones who have put into the business their resources and carry the greatest risk. Achieving a return on their invested funds at a given level of risk ensures that they remain in business. This approach is in the literature called **shareholder value**. The second approach is **stakeholder value**, which, as the name implies, includes all units whose needs need to be met to be able to continue in operating the business. These concepts are not mutually exclusive, contrary are linked to each other. In practice, however, is gradually promoted the importance to prefer the concept of shareholder value, because it is currently the only way of increasing stakeholder value. Maximizing the value of the owners is a prerequisite for increasing of value for all stakeholders. In other words, the core of stakeholder value is shareholder value.

## **2 Current trends in the use of individual indicators**

In the current literature we can find number of studies that track the timeliness and usefulness of individual indicators of performance evaluation. As the best indicators of value creation are in the literature presented EVA and MVA. Many studies are dedicated to these measurements and their interdependence. The first research that followed the relationship of these performance indicators was performed by Stewart (1991). He examined the relationship between EVA and MVA of 613 U.S. companies and found a strong relationship between EVA and MVA. A similar finding has been presented also by other authors. Ghanbari and More (2007) analyzed the relationship between EVA and MVA in the automotive industry in India and the results confirm Stewart's findings. Fernandez (2001) examined 582 U.S. companies in the years 1983-1997. The results showed that in the case of 296 companies had change in NOPAT higher correlation with changes in the MVA than with EVA, while for the remaining 210 firms the correlation between EVA and MVA was negative. Wet (2005) came to the opposite conclusions. In his study he examined 89 industrial firms in South Africa and found that EVA has not shown a strong correlation with MVA. Uyemura et al. (1996) also concluded that between EVA and MVA there is a strong relationship. This conclusion was reached through research on a sample of 100 bank holding companies, where they analyzed the relationship between the five performance indicators (ROA, ROE, EVA, earnings per share, net income) and the absolute value of MVA. Correlation between MVA and EVA was 40 %, with ROA 13 %, with ROE 10 %, with earnings per share 6 % and 8 % in the case of net income.

As mentioned above, in practice, there is number of methods used in process of measuring business performance. In Portugal, there was conducted research aimed to determine the use of new performance measures. The results indicate that firms prefer measurements based on net income. Overall, 24% stated as the most important benchmark ROE, 20% earnings per share and 16% ROS. Out of all enterprises, only 12% said that their preference method as EVA.

CF and ROA were represented by less than 10% in the overall preference. Part of the research was also to determine the awareness of models DCF, CFROI, ROIC and EVA. The most famous model is based on the results DCF (96%), while the EVA model is according to the research the least known and also the least used within the surveyed enterprises.

### **3 Factors affecting business performance**

Selection of an appropriate indicator of performance measurement is currently undoubtedly very important, but an essential part of the assessment and achievement of performance is also study of factors that have an impact on performance. Part of the researches in the field of financial performance examines how financial and non-financial factors such as debt leverage, liquidity, capitalization, investments, size, age, location, export and management, impact financial performance and growth of the company. The company can use its liquid assets to finance its operations and investments if external resources are not available or are too costly. On the other hand, higher liquidity enables the company to deal with unexpected events and to pay its liabilities during a period of low income (Opler et al., 1999). In contrast to the above facts, and Hvide and These (2007), based on a theoretical model according to Evans and Jovanovic (1989), indicate that the average amount of liquidity can be a driving force behind business performance but high liquidity may cause more damage. Therefore, the effect of liquidity on the financial performance of the company is dual. Also in the case of company size we can meet with the different impact on financial performance. Large companies can benefit from economies of scale and thus be more effective than small companies. In addition, small companies are not competitive enough compared to large companies. On the other hand, the bigger company is by the greater inefficiency it may suffer, which could affect financial performance. Even in this case, the theory provides two different possible impacts on business performance (Majumdar, 1997)

The study of authors Liargovas and Skandalis (2008) focused on the identification of the main determinants of the financial performance of companies. The study distinguishes between financial and non-financial determinants. Results showed that export, location, size and index of managerial competencies significantly affect the financial performance of companies in Greece. Prasetyantoko and Parmono (2008) also monitored the determinant of performance and applied their research in Indonesia. The main result was the finding that firm size has a positive relationship with the profitability of the company, but has no relationship with the market capitalization. Research was conducted on a sample of 238 firms in the period 1994-2004 and the study found that macroeconomic factors are important variables in terms of business performance.

In addition to financial indicators, have a significant impact on business performance also non-financial indicators. Some can be quantified fairly accurately (employee turnover), but in the estimation of other major role play subjective feelings of evaluator or realized researched without a random selection (customer satisfaction). Nevertheless, the role of non-financial metrics in measuring corporate performance is significant, as they emphasize on the actual strategy of fulfillment of the business objectives and not just to check achieved results. The methodology is based on statistical methods described in Tkáč (2001). These indicators can include ownership structure, method of business management, knowledge management and so on. This topic is part of the research of numerous authors. Toropilová (2006) in her research monitored the impact of an information strategy to business performance. Research showed a strong correlation between information strategy and values of ROA and ROE.

## Conclusion

Significant shift in the practice of performance measurement of Slovak companies was the moment of joining the European Union. This step started to increase demands on the performance of individual companies, because only by its increase the company could maintain their competitiveness. This condition persists until today, when businesses exist in a very competitive environment and they want to sustain their place in the market. Results of company are of interest to owners and managers, business partners or employees, so an integral part of successful business is monitoring of performance and factors that have the greatest impact on the overall performance.

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# THE POSSIBLE SOLUTIONS OF THE LONG-TERM UNEMPLOYMENT IN THE SELECTED DISTRICTS OF THE SLOVAK REPUBLIC

## MOŽNÉ RIEŠENIA DLHODOBEJ NEZAMESTNANOSTI VO VYBRANÝCH OKRESOCH SLOVENSKEJ REPUBLIKY

*Zuzana NIŽNÍKOVÁ – Denisa BILOHUŠČINOVÁ*

### Abstract

While watching the evolution of unemployment in Slovakia in different regions we concluded that unemployment had begun to rise towards the end of 2008, when first consequences of the economic crisis were approved. Furthermore, we found that the highest rate of registered unemployment is in central and eastern Slovakia. Specifically, region of Banská Bystrica with an unemployment rate 19.99% is the leader of this unpopular ladder, that is followed by the region of Prešov, where the registered unemployment rate is at 19.29%, and the region of Košice, where the rate of registered unemployment reached 2/1/2013 the rate of 19.10%. Evaluating this way, the best results reached the region of Bratislava with the rate of 5.28%.

### Keywords:

unemployment, rate of unemployment, natural rate of unemployment, unemployment forms, Košice

### Introduction

Unemployment is an intellection that is very actual today well not only in Slovakia but throughout the whole Europe. Each state deals with inter alia, the problem of unemployment. Unemployment has a negative impact on the economy of each country. With high unemployment, the economy is deprived of goods and services that people who are unemployed could produce in a given period. There may also exist social consequences of unemployment. Whether it is a decrease in the standard of living at unemployed and their families, or an increase in the crime and alcoholism. Not only for these reasons, the state tries to adopt various measures to reduce it and prevent its growth. Very critical year, which took quite a large share of the growth in the unemployment rate was 2009, when the whole world was badly hit by the economic crisis. This year, the Slovak unemployment rate was nearly at 14%.

### Unemployment in Slovakia

"Unemployment is a state when the proportion of the workforce is out of a work process. It arises as an imbalance between supply and demand for a labor.

An "unemployed" is considered to be a person who is able to work, but can not find a gainful employment. There are some definitions of unemployment. As an unemployed is considered a person who is:

- non-working, older than 15 years,
- actively seeking work,
- willing and able to start work."

Recently, unemployment in Slovakia as a result of the economic crisis, has increased. In 2011, the unemployment rate fluctuated around 14 - 15%.

Tab. 1

**Development of unemployment in Slovakia in 2011 according to Central Office of Labour, Social Affairs and Family**

Month	Percent (%)	Number of unemployed
January	14,68	391 637
February	14,82	395 445
March	14,71	392 483
April	14,41	384 465
May	14,25	380 016
June	14,36	382 984
July	14,48	386 307
August	14,40	384 220
September	14,64	390 559
October	14,62	390 125
November	14,74	393 122
December	14,99	399 800
<b>Average</b>	<b>14,59</b>	<b>389 263</b>

Source: Central Office of Labour, Social Affairs and Family

In the Table 1 we can see that the highest unemployment rate in 2011 was recorded in December, when the number of unemployed reached almost 15%. By contraries, the lowest unemployment rate in 2011 was registered in May, when the unemployment rate varied around 14.25%. Currently, Slovakia has the seventh highest unemployment in the European Union.

The table 2 shows the registered unemployment rate in the Slovak Republic in February 2012. The highest number of jobseekers was in the region of Prešov and the lowest number of jobseekers in the region of Bratislava.

Tab. 2

**Unemployment rate in regions of the Slovak Republic (February 2012)**

<i>Region</i>	<i>Job seekers</i>	<i>An available number of job seekers</i>	<i>The unemployment rate calculated from the total number of job seekers</i>	<i>The unemployment rate</i>
<b>Bratislava</b>	19 776	18 609	5,61	5,28
<b>Trnava</b>	30 229	27 191	10,22	9,19
<b>Trenčín</b>	34 119	30 901	11,29	10,22
<b>Nitra</b>	52 559	47 524	14,82	13,40
<b>Žilina</b>	44 528	40 222	13,47	12,16
<b>Banská Bystrica</b>	69 731	64 245	21,70	19,99
<b>Prešov</b>	84 181	74 695	21,74	19,29
<b>Košice</b>	76 678	68 319	21,43	19,10
<b>Slovakia</b>	<b>411 801</b>	<b>371 706</b>	<b>15,24</b>	<b>13,76</b>

Source: Central Office of Labour, , Social Affairs and Family

The districts with the highest rate of registered unemployment are the sovereign: Rimavská Sobota, Revúca, Rožňava, Poltár, Kežmarok, Sabinov and Trebišov. In all these districts, the unemployment rate reached a level higher than 25%.

Nowadays the situation in Slovakia is as follows: number of applicants for February 2012 was 411,801, there is an increase of more than 16,000 candidates in February compared to the previous year.

Table 3 is divided as follows:

Tab. no. 3

**Status of job seekers (February 2012)**

<i>Indicator</i>	<i>Počet</i>
<b>Status of job seekers at the end of the watched month</b>	411 801
<i>Woman</i>	195 827
<b>Individuals with disabilities</b>	13 267
<i>Released due to organizational reasons</i>	19 934
<b>Adolescents</b>	3 511
<i>Adolescents after high school</i>	46
<b>Adolescents – primary school finished</b>	2 488
<b>Adolescents – unfinished primary school</b>	977
<b>Graduates total</b>	29 587
<i>University graduates (incl. Bachelors)</i>	3 377
<b>Secondary vocational school graduates</b>	10 331
<i>Graduates of grammar school</i>	2 459
<b>Graduates of vocational schools</b>	7 824
<i>Graduates of vocational schools with school</i>	5 596



<i>leaving exam</i>	
<i>Status of job seekers according to the job clasification, in total:</i>	181 568
<b><i>Legislators, senior officials and managers</i></b>	3 968
<i>Scientists, brain workers</i>	6 876
<b><i>Technical, medical, educational staff</i></b>	19 682
<i>Administrative staff (officers)</i>	12 873
<b><i>Workers in services and trade</i></b>	26 385
<i>Workers in agriculture and forestry</i>	3 594
<b><i>Craftsmen and qualified producers</i></b>	33 774
<i>Plant and machine operators</i>	17 098
<b><i>Unskilled workers</i></b>	57 198
<i>Members of the military (proffesional soldiers)</i>	120
<i>Persons without occupation</i>	230 233

Source: Central Office of Labour, , Social Affairs and Family

In the following graph, under the form of a pie is figured the structure of jobseekers graduated by type of school. The graph shows that most job seekers come from vocational schools and vice versa, at least candidates come from grammar schools.

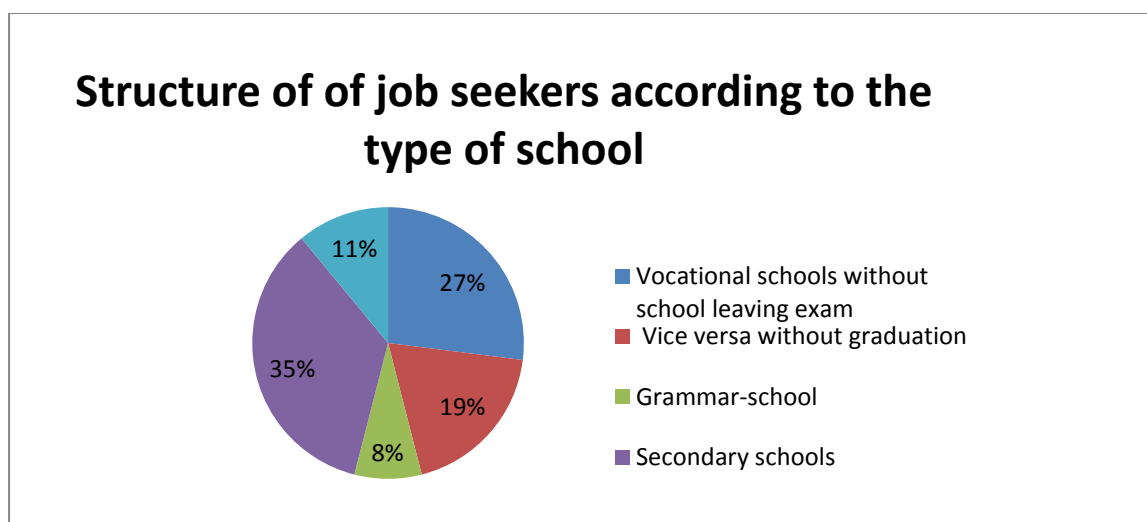


Fig. 1

**Structure of of job seekers according to the type of school**

Source: own processing by Central Office of Labour, Social Affairs and Family

## Unemployment in Košice

Tab. 4

### Development of unemployment rates in the years 2005 - 2012 in Košice

	2005	2006	2007	2008	2009	2010	2011	2012
<b>January</b>	15,20	14,27	11,39	9,55	10,06	12,62	12,94	14,40
<b>February</b>	15,14	13,99	11,24	9,38	10,54	12,53	13,07	14,37
<b>March</b>	15,01	13,64	10,95	9,11	10,93	12,53	13,13	
<b>April</b>	14,33	13,39	10,63	8,92	11,26	12,26	13,12	
<b>May</b>	13,76	13,01	10,47	9,12	11,79	12,15	13,22	
<b>June</b>	13,82	12,99	10,46	9,09	12,12	12,36	13,64	
<b>July</b>	13,44	12,78	10,26	9,05	12,32	12,50	13,86	
<b>August</b>	13,23	12,43	10,04	8,87	12,20	12,31	13,89	
<b>September</b>	13,68	12,29	10,00	8,98	12,76	12,41	14,11	
<b>October</b>	13,44	11,74	9,53	8,86	12,75	12,46	14,01	
<b>November</b>	13,33	11,57	9,38	9,39	12,60	12,27	14,02	
<b>December</b>	13,44	11,69	9,55	9,83	12,65	12,35	13,98	

Source: Central Office of Labour, Social Affairs and Family

From the table 4 is clearly visible that the highest unemployment rate was in Košice in 2005 and specifically in January, when it reached 15.20%. By contrast, the lowest unemployment rate for the period (2005 - 2012) was in 2008, specifically in October, when the unemployment rate fell to 8.86%.

From all these years, the year 2008 was the most positive in terms of the unemployment rate. The unemployment rate in the year did not exceed the limit 10%. The following year, an economic crisis carried both Košice and whole of Slovakia. The crisis started in 2007 in the U.S. mortgage institutions. From this year, the unemployment rate began to increase slightly and climbed up to the value of 14.37%, that was reached in February 2012.

### Basic and detailed information about unemployment in Košice in 2012

Tab. 5

#### Basic data about unemployment in Košice, 29.2.2012

<b>Economically active population</b>	<b>164 717 inhabitants</b>
<b>Registered unemployment rate</b>	<b>14,37 %</b>
<b>The total number of job seekers</b>	<b>25 726</b>
<b>The available number of job seekers</b>	<b>23 675</b>

Source: <http://www.upsvar-ke.sk/stat2.php>

Tab. 6

**Detailed data about unemployment in Kosice, 29.2.2012**

	<i>Kosice I</i>	<i>Kosice II</i>	<i>Kosice III</i>	<i>Kosice IV</i>	<i>Kosice surrounding</i>	<i>COLSAF in Kosice</i>
<i>Economically active population</i>	30 957	37 460	16 985	28 801	50 514	164 717
<i>Unemployment rate (RR) in %</i>	10,18	10,94	10,34	9,55	23,60	14,37
<i>Available number of job seekers</i>	3 098	4 161	1 776	2 813	11 877	23 675
<i>The total number of job seekers</i>	3 435	4 560	1 945	3 062	12 639	25 726
<i>Inflow of job seekers in a month</i>	370	488	216	342	1 096	1 797
<i>Drain of job seekers in a month</i>	308	399	166	229	789	1 712

Source: <http://www.upsvar-ke.sk/stat2.php>

From Table 6 we can see among other facts, that the total number of job seekers in Košice on 02/29/2012 is 25 726, which represents 14.37% percent of unemployment in Kosice. Also we can see the high unemployment rate in Košice - surroundings up 23.60%. Statistical analysis is based on Tkáč (2001).

**The proposal of the solving problem**

To cancel or reduce unemployment benefits and provide the work to those who lost their temporary or "alternate "work. The most important is for unemployed people to be able to keep their jobs and in case they lose it not to worry about losing either of their income, or their habits related to their given job and motivate them to find, if possible a better job as they used to have in the past.

**Košice II-Lunik IX**

As we mentioned, one of the biggest current problems of Košice is Lunik IX. There is a need to pick up the fact that the problem solved by Košice for several years seems to be insoluble. Lunik IX is situated southwest from the metropolis of Eastern Slovakia and has got about 100 hectares. This housing estate disposes of nearly 7,000 Romany residents according to unofficial statistics. According to the approximate information there is almost 99% unemployment. Could these frightening numbers be cut somehow?

One of the possible solutions might be so called "the second chance. " The second chance" could be something like a revival of the current situation, or start from scratch. This would represent some reeducation of inhabitants to put their children to kindergartens, primary and secondary schools later.

The reasons why almost 100% of the Romany population is unemployed:

- Low education and illiteracy - if a citizen wants to work, have a good job and earn well, he must be educated and trained. Currently there is no job for uneducated and unskilled people and if there is any, it is poorly paid.

- poor social system - social system in Slovakia has one critical mistake – provision of social benefits to unemployed citizens without consideration, which means that unemployed receive social benefits without having to take some action, either for their town, city or state. Unemployed does not need to look for a job when he gets money for it.

- locations inhabited by Romany citizens - most of the Romany people live in eastern Slovakia, where is even the lack of job opportunities for educated citizens.

### **Proposal to solve the problem of Košice II-Luník IX**

- Education of Romanies,
- Legislative and organizational measures,
- Implementation of the social employment.

We share the idea to establish so-called social employment. It would be a relationship between citizens and their town or village, which should instead of the typical working hours count with shortened number and this would be some kind of work in favor of the town or city. As a reward for the work, the state would provide to citizens some financial benefit in the form of social benefits. Citizens who lose their jobs would come to register to the city or municipal office. The town or village would immediately take them to a social employment. During six months, a citizen has the opportunity and time to find a new job. If a citizen does not find a new job during that period, he is automatically obliged to work for the city or village. This means he would be working for a city or village approximately 20 hours a week. From these, 4 hours will be obligated to participate in any training and remaining 16 hours a citizen would be working for the city manually: snow removal, tree trimming, dust collection, park and playground treatment and so on.

### **Conclusion**

These actions would be recorded by a record which would consequently be evaluated by Social Insurance Agency in Slovakia, which according to the

evaluation would pay or not pay a salary to a citizen. We see the main advantage of this system in the fact, that a citizen who lost his work, would not lose his working habits and income. Moreover, it would be uniform throughout Slovakia, so there would not work any favoritism. Another very important advantage of this system would be the fact that a working citizen has the opportunity to educate himself actively and so to get more opportunities to find a new job.

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# **BARRIERS TO E-MARKETING DEVELOPMENT IN POLISH HOTEL INDUSTRY**

*Sebastian KOPERA, Ewa WSZENDYBYŁ-SKULSKA*

## **Abstract**

Application of e-marketing activities and solutions in an innovative way relies heavily on the internal ICT skills and competencies. The report, using secondary data, discusses the deficiencies of the Polish accommodation sector in this field: insufficient ICT employee training as well as limited employment of ICT specialists. It is argued that development of ICT competencies should be domain of formal educational institutions as well as hotel enterprises. In the latter group the most important role should be played by managers and owners. They should have the capability to understand the role of new media in marketing. Without this understanding there will be no readiness to invest in skills and competencies of employees that can turn e-marketing opportunities into e-value for accommodation businesses.

## **Keywords**

e-marketing, hotel industry, ICT

## **Introduction**

Hotel sector is subject to the general market forces, yet it has numerous specific features as well. They result largely from the properties of the subject of an exchange in the hotel market. The characteristic features of the hotel sector are in particular (Borkowski & Wszendybył, 2007):

- capital intensity;
- permanent potential;
- necessity to keep an object in constant readiness to provide services;
- seasonality of service potential;
- efficiency;
- specific cost structure;
- lack of production capacity to spare;
- dependence on a visitor's decision;
- high share of cash transactions;
- fundamental importance of location;
- hotel is a service-oriented object.

However, a wide range of other services is used by both local people and institutions (Witkowski & Kachniewska, 2005).

Hotel industry is a kind of service activity by which needs are met but no product is made. It is therefore the realm of intangible services that meet individual and social needs of provision of accommodation, food and any other services to both travelers and other temporarily accommodated guests.<sup>3</sup> Thus,

hotel industry is an organized economic activity, and its primary function is to provide hospitality, defined as the provision of:

- convenience, standard, level of services,
- stay safety, nice atmosphere during a stay,
- high professional, ethical and moral level of employees.

Today, good functioning of a hotel business is associated with a continuous and ongoing competition to win new customers and new markets. Each hotel worldwide faces a necessity to make a variety of responsible and timely decisions in order to gain the customers' attention and gain their favour. Such decisions are endowed with some risk due to constantly changing environment and particularly dynamic market changes. It also entails changes in the approach to hotel marketing activities that in the era of 21st century must be focused on the use of modern information technology solutions. Their application in marketing field lead to development of e-marketing, which can be defined as utilization of available information and communication technologies "to communicate with target markets in the most cost-effective ways, and to enable joint working with partner organizations with which there is a common interest." (WTO/ETC, 2008, p. 1).

There are many stimulators and inhibitors of e-marketing development in hotel industry. At organizational level they can be analyzed from different perspectives including technology acceptance (e.g. Goo, Hyoungh, & Law, 2008) and business innovation (e.g. Buhalis & Law, 2008; Hjalager, 2002, 2010). Although those perspectives investigate e-marketing development from different standpoints, to some extent all of them indicate human resource issues as critical success factor or key barrier to its development.

The purpose of this report is to analyze human resource-related issues as determinants of e-marketing in Polish hotel industry. The analysis will be conveyed based on representative secondary data from the national surveys on application of ICTs in Polish enterprises.

## **E-marketing technologies in hotel industry**

E-marketing solutions facilitate numerous important marketing functions, including: communication with customers, brand building, managing interactions and relationships with external entities, product promotion and distribution, decision making based on digital data available internally and externally, etc. (WTO/ETC, 2008, p. 2). Unlike traditional marketing tools digitally-based solutions enable customization of the hotel offer, to the needs and requirements of individual customers that can be sold online as well as offline. The internet – probably the most influential contemporary ICT in e-marketing landscape – enables hotels to reshape their marketing and communications strategies (Dimitrios Buhalis & Law, 2008, p. 611). By using modern ICT hoteliers build customer satisfaction and loyalty – the key success factors in contemporary hotel industry (Dev, Buschman, & Bowen, 2010, p.



459), (Goo et al., 2008, p. 500). The very important play in this context CRM systems (O'Connor & Murphy, 2004, p. 475).

Electronic channels are also more and more important for hotel distribution (O'Connor & Frew, 2004, p. 179). Application of ICT in hotel product distribution has led to development of different intermediary models challenging hotels' profitability. For example the merchant model in which intermediaries decide on the final price put the rising pressure on hotels to decrease average rates, what leads to rising dependence of hotels and decreasing their profitability (O'Connor & Murphy, 2004, p. 474). It is the reason for hotels to redirect booking activities to their own web pages, what leads to disintermediation (D. Buhalis & Licata, 2002, p. 208). Distribution of hotel product through various channels requires flexible multichannel pricing, online pricing, including innovative models of online negotiations (Litvin & Crotts, 2003) which are also supported by digital solutions. It is worth noticing, that that online buying is a factor, that usually strengthens negotiation position of customers (Kim, Lee, Chung, & Kim, 2013).

One of the foundational e-marketing solution for hotels are their websites, which can be the platforms integrating streams of interaction between hotels and their environment. Websites should enrich tourist experience (Dubé, Le Bel, & Sears, 2003), (Stamboulis & Skayannis, 2003) at the same time providing functionalities for customer communication, booking, as well as information on the region hotel facilities and website management (Chung & Law, 2003, p. 122).

In the digital economy tourists more and more often move with their travel-related activities to the virtual space: they search for deals over the Internet, plan their trips, book and pay for services online, surf during their trips, comment their experience in social media domain, etc. Digital media make tourist experience more versatile than ever before, creating at the same time more space for their own choice. Tourists use increasing amounts of information from digital infospace, but they also create a lot: intentionally (e.g. comment on hotel website) but also unintentionally (booking history, web search history, etc.). To make better decisions contemporary hotels should try to integrate information and knowledge from different sources into one comprehensive CRM system. This kind of attitude seems inevitable as far as effective hotel profit management of the (nearest) future is concerned (Dev et al., 2010, p. 467).

Social media, one of the most significant trend in tourism (Xiang & Gretzel, 2010, p. 179) have also challenged hotel industry. Social media domain (SMD) which consists of all information entities that comprise social media content is a source of rising amount of knowledge on customers and competitors. Utilization of social media for collecting information on customers, and improving operations has been identified among the critical trends for tourism industry in 2013 (World Economic Forum, 2013). Social media presence induces also many exogenous challenges to hotels, emerging from the rising importance of virtual communities, and recommender systems (Dimitrios

Buhalis & Law, 2008, p. 612). One of the critical challenges for hotels (as well as for tourism in general) is in this context to apply efficient tools and strategies supporting intelligent search, retrieval and analysis of social media content. At present acquisition of valuable information and ready to use knowledge from SMD is recognized as time, energy and resource consuming activity (Akehurst, 2009). At the same time it is noticeable, that the changes on demand side imposes changes on supply side – more and more hotels become active (or at least present) on the mainstream virtual community portals. Closer and more informal contacts with customers are invaluable sources of insights leading to innovations (Hjalager, 2002, p. 468).

### **Barriers to developing e-commerce in tourism**

Information technology is one of the most important forms of innovation not only in lodging services but in tourism in general (Hjalager, 2010, p. 7). However, the application of IT and related business model and strategy-related innovations meets many significant barriers in the industry, in which only less than 10% of all enterprises employ more than 10 people (Study on the Competitiveness of the EU tourism industry, 2009, p. 20). Small size of enterprises is one of the most important barriers for innovative uptake of e-business in tourism (European Commission, 2006, p. 5). It contributes significantly to personnel related problems which are proven to hamper innovation activities (Hjalager, 2010, p. 10).

The role of employees and managers – their skill, attitudes, motivations, etc. – in effectiveness of innovation processes in tourism has been addressed in many research (e.g. (Brentani, 2001; Grisseman, Pikkemaat, & Weger, 2013; Hjalager, 2002, 2010; Ottenbacher & Harrington, 2010; Scott, Baggio, & Cooper, 2008), (Goo et al., 2008, p. 502)). In the recent survey among Alpine hoteliers Grisseman et al. have identified that innovations in the area of hotels' IT are determined by employee engagement, customer participation, innovation management and innovation networks (Grisseman et al., 2013, p. 18). Employee engagement is the function of many aspects: skills developed by training, empowerment (Grisseman et al., 2013, p. 18), (Ottenbacher & Harrington, 2010, p. 3), (Sundbo, Orfila-Sintes, & Sørensen, 2007, p. 99), involvement, strategic human resource management (Ottenbacher & Harrington, 2010, p. 3), employee expertise and training (Brentani, 2001, p. 169, 182). Significant importance for staff innovativeness is also positive attitude to IT (Sundbo et al., 2007, p. 98).

A very important issue regarding barriers to IT implementation in hotels is absorptive capacity (Scott et al., 2008). It describes the ability of employees and managers to understand the importance of external knowledge, acquire it and make use of it (Cohen & Levinthal, 1990, p. 128). It also involves awareness of knowledge deficiency ("I know, that I don't know" attitude) and at least basic trust that new knowledge/technological solution can help company to improve.

Without this awareness there is no motivation to search for and acquire any kind of new information. In the context of IT investments it may appear as lack of understanding the role of (IT) innovation in building and sustaining competitiveness (ECORYS, 2009, p. 169). It is worth noticing, that absorptive capacity can be identified on individual level (capacity of manager or employee) or on company level. Generally, the latter attitude seems more justified as innovation processes are complex and involve many different individuals as well as interactions between them. But still the core of the problem is human resource – related.

### **E-commerce in Polish accommodation sector**

E-commerce is closely related to e-marketing, and to some extent it can reflect the development and effectiveness of the latter one (WTO/ETC, 2008). This argument, together with lack of representative data on e-marketing itself, analysis of human related determinants will be preceded by the overview of the current development of e-commerce in Polish accommodation sector.

Accommodation sector is generally open to adoption of information technology related to electronic distribution (O'Connor & Frew, 2004, p. 179). It is closely related to the pragmatic attitude to innovation, which is typical for the whole tourism industry (Hjalager, 2002, p. 469). Figure 1 presents the level and dynamics of hotel websites utilization for product distribution in Polish hotel industry.

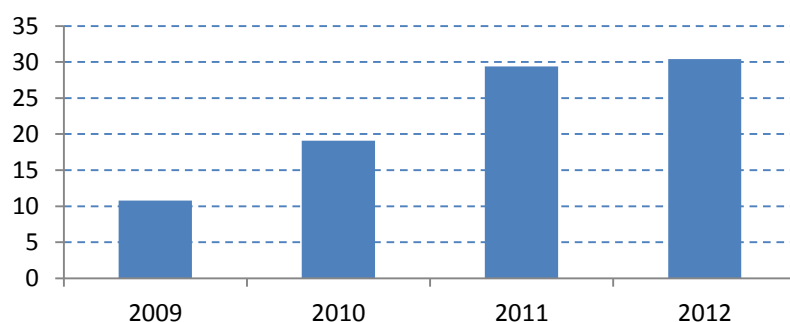


Fig. 1

**Utilization of hotel websites for product distribution at Polish hotels.**

Source: (GUS, 2009, 2010, 2011, 2012)

The share of Polish hotels utilizing websites for booking and selling their products to customers is rising, however the pace of this rise has decreased significantly in 2012. It is worth noticing, that those results refer only to booking through dedicated solutions – own or partners' ones, but offered from the level of hotels' web page – regardless of the payment method. At the same time they exclude booking realized through e-mail.

The level of e-commerce utilization in Polish accommodation sector is higher than the average for the whole service sector (fig. 2), what can be explained by the mentioned specificity of hotel business. However it is worth noticing, that dynamics of e-commerce is lower in hotels than the average for services.

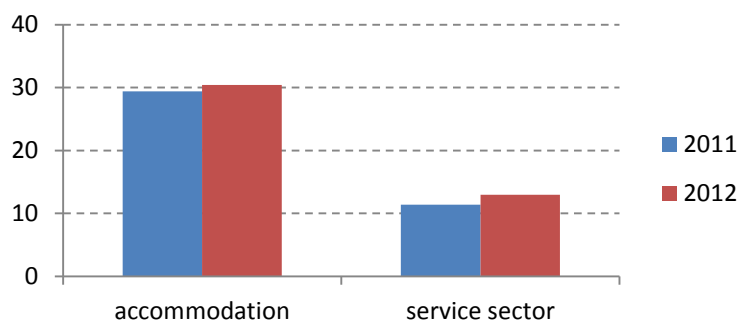


Fig. 2

#### **E-commerce development for accommodation and service sector**

Source: (GUS 2012)

### **Human related barriers to e-marketing development**

Although accommodation sector belongs to service sectors' leaders in e-commerce, the picture changes when analyzing number of employees, who use IT in their everyday work. According to Eurostat survey regarding utilization of ICTs in enterprises (Fig. 3) only 36% of people employed in lodging facilities declared that they use computers daily, comparing to 49% which was the average for the whole European economy (Eurostat, 2008). The only sector with lower result was construction. The results of accommodation sector suggest that its level of IT saturation, and in consequence, required IT competencies is lower than in most other sectors. Low requirements do not attract people with correct skills, what in turn limits the ability of the enterprise to grow in this direction in the future.

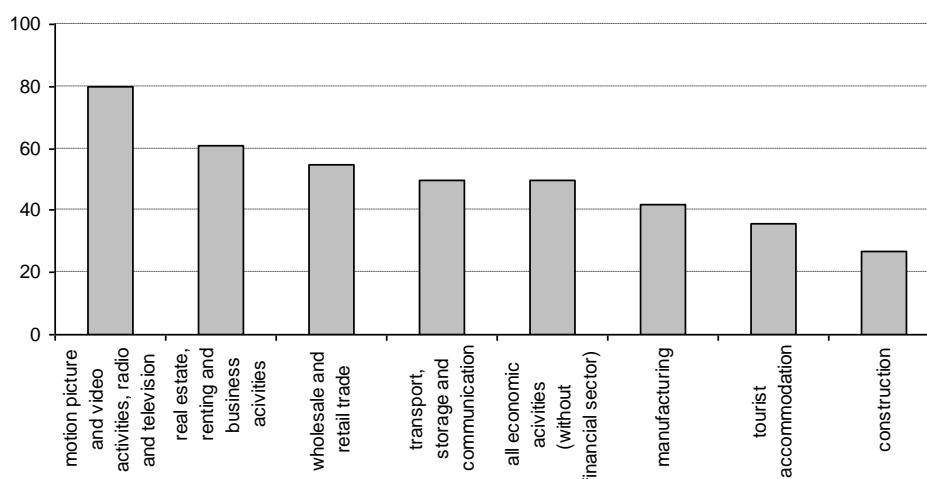


Fig. 3  
**Employees using ICT in their everyday work (data for 2007)**  
 Source: (Eurostat 2008)

Internet utilization is a key factor in development of e-marketing in accommodation sector, as the number of “internet ready” tourists is rising dramatically every year. In lodging sector it is measured by the share of employees using computers with internet access (Fig. 4). Over the period 2010-2012 the general tendency was rising, although this trend was not stable. For example in 2010, and then in 2012 small drops can be observed. It is worth noticing, that this tendency is accompanied with the rising utilization of mobile devices, which also provide internet access. Although they started to appear in country statistics in 2011 strong rising trend can be noticed. Considering dynamic rise of mobile technologies adoption it is possible that computer-based internet access will not be growing as fast as it has been observed in the last years.

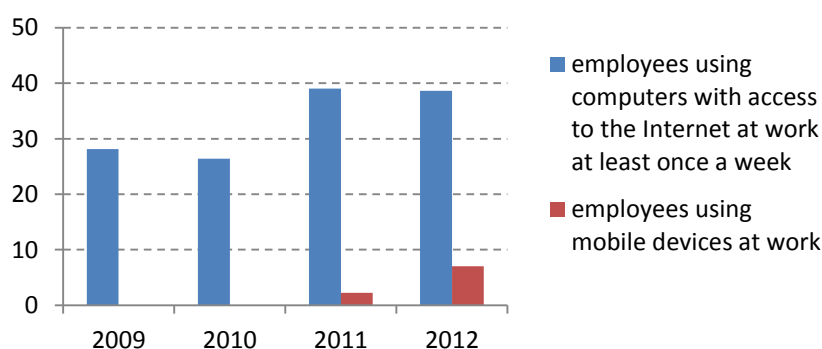


Fig. 4  
**Share of lodging sector employees using computers with internet access in their everyday work**  
 Source: (GUS 2009, 2010, 2011, 2012)

In this sector work usually young people (20-25 years old), who are the most active internet users in Poland. This can explain the mentioned rising

tendency of internet access at tourism enterprises. What is interesting this tendency is much stronger than the average for all service sectors (Fig. 5).

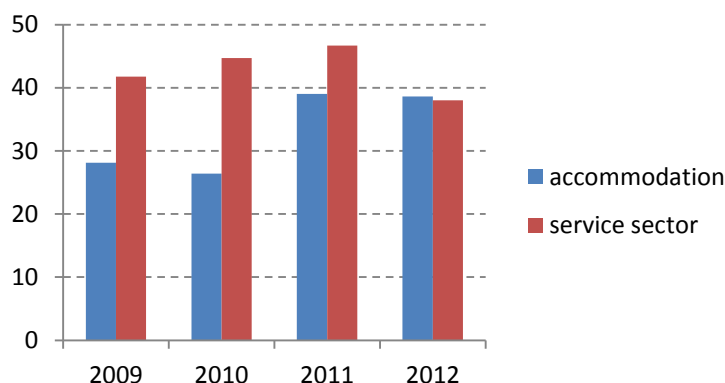


Fig. 5

**Dynamics of utilization of computers with internet access by employees - accommodation sector vs. average for all service sectors**

Source: (GUS 2009, 2010, 2011, 2012)

Another feature of the tourism industry is also strong influence of globalization on its functioning and development. As a result rising requirements for employees can be observed regarding obtaining varied skills and competencies, including ICT related ones (Becherel & Cooper, 2002). Considering opportunities emerging within e-markets, rising e-competencies and requirements of the customers, competitive pressure as well as new technological developments, hotel managers should be particularly focused on fostering development of IT related skills and competencies by their employees. However the actual situation in this field is not too optimistic (Fig. 6).

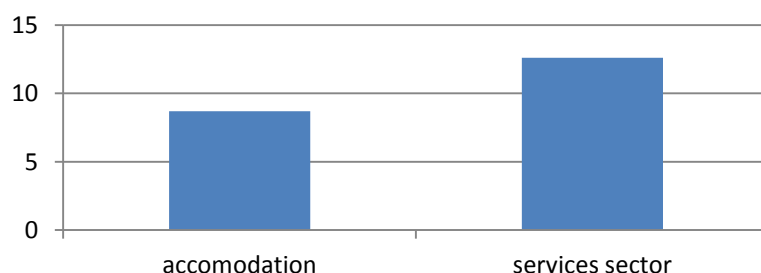


Fig. 6

**Enterprises providing IT related training to employees (data for 2011)**

Source: (GUS 2012)

In comparison with the average for service sector the share of accommodation sector employees participating in any form of IT skills and competencies development is significantly lower. Only 8,7% of enterprises provides their staff with adequate training. Considering education system

deficiencies regarding ICT competencies development lack of further opportunities for staff to fill in the existing gaps will result in hampering e-marketing development, as it is strongly related to this group of skills and competencies.

Underdevelopment of Polish accommodation sector in this field is also confirmed by the number of ICT specialists employed in 2012 (Fig. 7). Tourism enterprises are mostly micro sized, so they

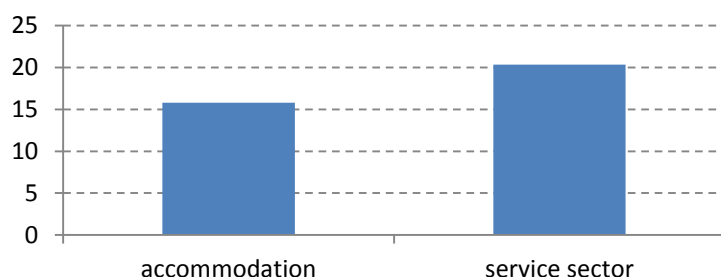


Fig. 7

#### **Enterprises employing ICT specialists in 2012**

Source: (GUS 2012)

usually have no resources to employ staff that is not directly involved in the basic processes. But the same is true to other service sectors, and still the average number of ICT staff for services is much higher than for lodging companies.

## **Conclusions**

Contemporary tourism market imposes utilization of e-marketing which is based on the modern ICTs. Implementation of new media in marketing revolutionize the way in the customer is identified, approached, and satisfied. It supports differentiation of distribution channels, pricing strategies, and contributes do loyalty building. The key ICT function in the knowledge based tourism economy is also providing access to the external knowledge and information, that can fuel internal innovation processes (Kopera, 2013). But the realization of those ICT-based opportunities in lodging sector is usually hampered by internal and external circumstances.

Enterprises providing accommodation services have usually micro or small size, what results in strong limitation of resources, that can be spend on non-operational processes or competencies. They usually cannot afford employing IT specialist, and at the same time they cannot spend much money on employee training. This situation is very difficult, because it constitutes a significant barrier for e-marketing development. However it is worth to notice a wider context of service industry (or even digital economy) to find some conclusions and recommendations for this kind of business. The first is consumerization of ICTs utilized in business, which is understood as application of widely available

consumer solutions for business purposes. Consumerization of business IT leads to a 'backdoor' computerization of lodging businesses. Contemporary employees of accommodation sector represent 'generation Y'. They are fully immersed in a digital space in which they learn, play, socialize and also work. They usually possess at least basic ICT knowledge that can be applied for business purposes. However this trends should not be taken as the excuse for not providing sufficient ICT training to tourism and accommodation staff by formal education institutions. Even though young employees are quite well acknowledged with contemporary ICTs, it is usually not enough to undertake and develop effective e-marketing activities. Something else is commenting blog entries of other individuals or institutions and something else is running a professional blog for a hotel. This kind of specialized competencies must be taught during formal education, and further developed in the form of lifelong learning.

The other important trend in digital economy is outsourcing, more and more popular also in the field of ICT and e-marketing. Companies having no internal resources (or will) to engage in developing and maintaining their infostructure as well as e-marketing activities can commission them at external organizations. Theoretically it solves the problem of internal skills shortage, and form many enterprises it is a valid option. However there are some limitations of this alternative, and its price is not the most important one. The key limitation regards the ability to innovate. Without an adequate internal understanding of the opportunities offered by contemporary ICTs and – at least – basic knowledge how to utilize them to innovate, e-marketing activities will copy more or less standard solutions offered to different companies by external e-marketing agencies. Thus the availability of external resources should not release accommodation enterprises from developing internal ICT competencies as well as educational institutions from providing extended and insightful ICT training for future lodging personnel.

Application of e-marketing activities and solutions in an innovative way relies heavily on the internal ICT skills and competencies. Their development should be primarily domain of educational institutions (formal programs) as well as hotel enterprises. In the latter group the most important role is played by managers and owners. They should have the capability to understand the role of new media in marketing. Without this understanding there will be no readiness to invest not necessarily in IT solutions, which are often freely available in external cloud, but in skills and competencies of employees, because only they can turn e-opportunities into e-value for accommodation businesses.



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# USE A TEST INDEX BEERMAN CREDIBILITY IN INDUSTRIAL ENTERPRISES IN SLOVAKIA

## VYUŽITIE BEERMANOVHO TESTU A INDEXU BONITY V PRIEMYSELNÝCH PODNIKOV NA SLOVENSKU

*Daniela DIHENEŠČÍKOVÁ - Adela SLIVKOVÁ*

### **Abstract**

There are dozens of theoretical models that try to more or less successfully evaluate business performance. The aim of these models is to predict financial situation by solvency and bankruptcy indicators, that are based on fundamental analysis of the year-end financial statements.

The aim of the present paper is to assess the financial health of 20 enterprises of the industrial production in Slovakia by Beerman test and solvency index.

### **Keywords:**

Beerman test, solvency index, bankruptcy of the company, the financial health of the company, manufacturing

### **Abstrakt**

Existujú desiatky teoretických modelov, ktoré sa snažia viac či menej úspešne zhodnotiť výkonnosť podniku. Cieľom týchto modelov je predvídať finančnú situáciu pomocou bonitných a bankrotných indikátorov, ktoré sú založené na fundamentálnej analýze koncoročných účtovných výkazov.

Cieľom predkladaného príspevku je posúdenie finančného zdravia 20 podnikov z oblasti priemyselnej výroby na Slovensku na základe Beermanovho testu a indexu bonity.

### **Kľúčové slová:**

Beermanov test, index bonity, bankrot podniku, finančné zdravie podniku, priemyselná výroba

## **Introduction**

The term financial health indicates the company's ability to maintain balance to changing ambient conditions and also in relation to all those involved in the business. Financial health is if the company maintains its own existence and is able to evaluate the capital to the extent that is required by shareholders. The results of the financial analyse are different in various industries, as companies have different ownership and financial structure, and also the different structure of profit. The financial health needs to achieve sufficient profit and long-term liquidity.

In bankruptcy we consider a situation when the organization is not able to reverse their poor financial health and that state is in accordance with applicable

legislation in the country. These technical terms are also used as "business, business failure, failure" (corporate failure, if necessary Business failure).

The aim of the present paper is to review the financial health of 20 enterprises of the industrial production in Slovakia by Beerman test and solvency index.

### **Bankruptcy prediction models of company**

In predicting the financial situation of enterprises are used the mathematical-statistical methods, when a prediction of the financial development is more difficult, and there are used the following methods:

- one-dimensional discriminant analysis method - the method predicts financial distress based on simple characteristics (using a pointer),
- method multivariate discriminant analysis - forecasting financial position using a particular set of multiple indicators that are assigned different weights.

Mathematical-statistical methods are widely used and their advantage is that the results are exact and noncontrollable by views and experience of experts.

Using discriminant analysis means the classification of objects of unknown origin into two or more groups of potential. Discriminatory criterion for classifying unknown objects into groups is the function of the original variables estimated on the basis of the sample units with known affiliation to groups. Multivariate discriminant analysis is currently the process, which is used the most in classifying enterprises to a thriving and thriveless ones in forecasting their future development.

In predicting bankruptcy or financial health based on multivariate discriminant analysis using statistical software that generates discriminatory function from the entered data and values of the discriminant function for each case of possible classification. It also produces a summary classification table. This table shows how many cases are correctly classified into the groups (R HEBÁK et al., 2004).

The advantage of discriminant analyse is a very good quality of prediction for the existence of high-quality data set.

### **Beerman test**

Beerman test (Beerman discriminant function BDF) is suitable for craft enterprises and enterprises manufacturing nature. Beerman discriminant function is not suitable for enterprises, in which dominates business activity. The starting point for research were 21 joint-stock companies, that became insolvent in 1966-1971.

$$\text{BDF} = 0,217 * x_1 - 0,063 * x_2 + 0,012 * x_3 + 0,077 * x_4 - 0,105 * x_5 - 0,813 * x_6 + 0,165 * x_7 + 0,161 * x_8 + 0,268 * x_9 + 0,124 * x_{10}$$

(Zalai, 2007)

where:

$x_1$  = depreciation of long-term assets / (initial state of long-term assets + increase over the period),

$x_2$  = increase of long-term assets for a period / depreciation of long-term assets,

$x_3$  = EBT / sales,

$x_4$  = bank loans and borrowings / foreign capital,

$x_5$  = inventory / sales,

$x_6$  = cashflow / foreign capital,

$x_7$  = foreign capital / assets,

$x_8$  = EBT / assets,

$x_9$  = sales / assets,

$x_{10}$  = EBT / foreign capital.

BDF values are interpreted as follows:

- if the BDF is greater than 0.35, the financial situation of the company is bad,
- if the BDF in the interval 0.25 to 0.35, the financial situation is average up to below-average,
- if the BDF in the interval 0.2 to 0.25, the financial situation of the company is good,
- where the BDF is less than 0.2, the financial situation of the company is very good.

Dividing value that differentiates thriving enterprises from thriveless ones, is 0.3. The more the value of the BDF is greater, the more the company's financial situation is worse and the enterprise could risk bankruptcy. Conversely, the more value of the BDF is less, the more the company's financial situation improved.

### **Solvency index**

Solvency index (B) is very often used in Germany, Austria and Switzerland. Fundamentally it is a simplified Beerman discriminatory function. Reliability index takes the form:

$$B = 1,5 * x_1 + 0,08 * x_2 + 10 * x_3 + 5 * x_4 + 0,3 * x_5 + 0,1 * x_6$$

(Grünwald – Holečková, 2001)

where:

$x_1$  = cashflow / foreign capital,

$x_2$  = total equity / foreign capital,

$x_3$  = EBT / assets,

$x_4$  = EBT / income from production,

$x_5$  = inventory / income from production,

$x_6$  = income from production / assets.

Interpretation of values of solvency index B is then as follows:

- B is less than - 2 .... company's financial situation is extremely bad
- B is in the interval of -2 to -1 .... company's financial situation is very bad
- B is in the interval -1 to 0 .... company's financial situation is bad
- B is in the interval 0 to 1 ..... company has some problems
- B is between 1 and 2 .... company's financial situation is good
- B is in the interval 2-3 .... company's financial situation is very good
- B is greater than 3 .... company's financial situation is extremely good

Multivariate discriminant analyse (Tkáč, 2001) is currently the process, that is mostly used in classifying enterprises to thriving and thriveless ones and in forecasting their future development.

### Bankruptcy prediction in industrial enterprises

In following text, there are the values calculated using the Beerman test and solvency index credibility in surveyed sample of 20 enterprises, and then valuation of the financial health of enterprises by SK NACE Rev.2 division belonging to the section C – Manufacturing.

We drew the data needed to predict financial health, from statement of finances of enterprises for the business year 2010. We have come to results that are listed in the following table.

Table 1

#### Results of a test Beermanovho creditworthiness index

Name of company	Beerman test	Classification	Solvency index	Classification
I.	0,943	Bad situation	0,082	Company has some problems
II.	-3,729	Very good situation	12,056	Extremely good situation
III.	0,048	Very good situation	2,285	Very good situation
IV.	0,513	Bad situation	-0,137	Bad situation
V.	0,071	Very good situation	0,927	Company has some problems
VI.	0,538	Bad situation	-3,017	Extremely bad situation
VII.	0,008	Very good situation	-2,740	Very bad situation
VIII.	0,177	Very good situation	1,646	Good situation
IX.	0,589	Bad situation	1,525	Good situation
X.	0,374	Bad situation	0,344	Company has some problems
XI.	0,347	Average up to below-average situation	0,605	Company has some problems
XII.	-0,568	Very good situation	0,037	Company has some problems
XIII.	0,603	Bad situation	-0,318	Bad situation
XIV.	0,198	Very good situation	-0,810	Bad situation

XV.	0,099	Very good situation	0,938	Company has some problems
XVI.	0,205	Good situation	1,132	Good situation
XVII.	-1,156	Very good situation	7,045	Extremely good situation
XVIII.	0,132	Very good situation	1,431	Good situation
XIX.	-0,795	Very good situation	4,724	Extremely good situation
XX.	0,347	Average up to below-average situation	5,112	Extremely good situation

Source: own processing

Table 1 contains the results of a test Beerman index and solvency index. This is graphically illustrated in Figure 1. Based on the results of the Beerman test and solvency index, we can say that in 13 cases the value prediction of financial health were similar.

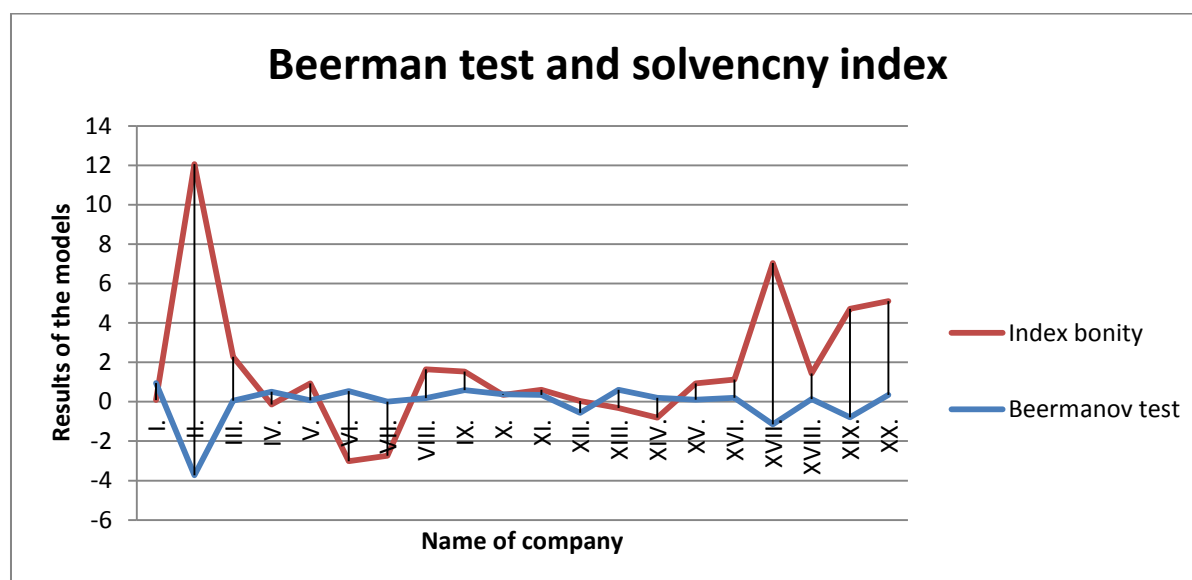


Figure 1

**Result of the Beerman test and solvency index**

Source: own processing

In two cases (enterprise IX., And XX) solvency index predicts good financial position, while Beerman test refers to the threat of bankruptcy. In five cases, the gained values are very different, while Beerman test predicts a very good financial situation and solvency index a bad situation, or enterprise is in trouble. In particular, the results are shown in the enterprises: V., VII., XII., XIV., XV.. This can be affected by the diversity of the indicators used in the research index. While Beerman test indicator contains x1 and x2 long-term assets, depreciation and increase of long-term assets, solvency index does not include these variables.



## Conclusion

We applied ourselves to a prediction of bankruptcy on the sample of 20 enterprises in Slovakia in 2010, in that article. The result of this survey was that 12 enterprises according to financial statements belong based on Beerman test between financial health companies and 8 enterprises are bankrupt ones. Solvency index defines in our study up to 11 bankrupt companies.

Multivariate discriminant analysis, where we include also Beerman test and solvency index is the procedure, that is the most frequently used in classifying of the enterprises in forecasting their future development.

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# THE COMPARISON OF THE SLOVAKIAN AND UKRAINIAN CONSUMERS' ETHNOCENTRIC ATTITUDES - THE RESULTS OF THE DIRECT SURVEYS<sup>1</sup>

## POROVNANIE SLOVENSKÝCH A UKRAJINSKÝCH SPOTREBITEĽOV ETHNOCENTRIC POSTOJOV - VÝSLEDKY PRIAMYCH PRIESKUMOV

*Andrzej SZROMNIK - Elżbieta WOLANIN-JAROSZ*

### Abstract

In the following article the results of empirical researches have been discussed. Their aim was to define the consumer ethnocentrism level of the inhabitants of Slovakia and Ukraine. The main source material was acquired thanks to direct interviews, conducted in two towns: Koszyce (Slovakia) and Iwano Frankowsk (Ukraine), in a chosen group of 800 respondents (400 people in each town). The international CETSCALE questionnaire has been used as a measuring instrument. The analyses presented, clearly indicate that, Slovak as well as Ukrainian consumers show ethnocentric tendencies. However significantly bigger CET scale values have been obtained in Ukrainian community. It has also been noted that demographic factors have meaningful influence on the ethnocentric level of the both groups researched.

### Keywords:

consumer ethnocentrism, CETSCALE questionnaire, Slovak-Ukrainian empirical research

### Introduction

In present economy, consumers are one of the most important subjects on the market. They create the most numerous economic group. Businessmen, as well as business groups have to take it into account. It is necessary, however, to learn about consumers' behaviour, that is about the level and structure of consumption, defining the expenses category, the choice of exact brands, the purchase models, the products usage models and distincting the factors which influence the buyers' behaviour.

Nowadays, in present market conditions, when the effects of economic crisis, which has influence on the world economy, crucial changes in consumers' behaviour can be observed. Consumers make decisions which depend on the adaptation to the new conditions, new market reality. This phenomenon is demonstrated by constant and aware buying and using domestic products and at the same time "rejecting" the products offered by foreign companies by customers<sup>2</sup>. Ethnocentric purchasers strongly emphasize their

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<sup>1</sup> The dissertation financed from the budgetary funds on education in the years 2010-2014 as a research project (nr: NN 112203839)

<sup>2</sup> S. Sharma, T. A. Shimp, J. Shin, Consumer ethnocentrism: A test of Antecedents and Moderators, Journal of the Academy of marketing Science 1995, No. 1

view about economic harmfulness (for example for domestic industry or agriculture) buying imported products.

Ethnocentric attitudes` identification is a valuable source of knowledge to elaborate effective enterprises` strategies, especially connected to segmentation and marketing communication.

In the following article the consumer ethnocentrism phenomenon has been discussed and the results of empirical studies have been presented. The main aim of the empirical studies was to conduct a wide diagnosis of Slovakian and Ukrainian consumers` ethnocentric attitudes, taking into consideration the nationality differences. Particular attention has been paid to defining the level of consumer ethnocentrism and showing the influence of the chosen socio-economic factors on the CETSCALE value.

## **1. The ethnocentrism term and the research methodology**

The ethnocentrism term appeared in the beginning of XX century in social studies. The term was first introduced by an American ethnologist and sociologist William G. Sumner<sup>3</sup> in 1906 year, who presented ethnocentrism in the context of natural resources of a human behaviour in a group. Sumner claimed that the members of a given group live peacefully with each other, however, they are usually in conflict with other groups (the outside ones).

On this theoretical basis Sumner described the ethnocentrism term as “a way of perceiving, according to which one’s own group is the centre of everything and everything is judged and prioritized in relation to it”<sup>4</sup>. People, their attitudes, behaviour, and things are valued and judged by the prism of one’s own environment. They praise their own culture but at the same time depreciate an outer group`s culture.

Relating to the Sumner`s concept, currently known sociologists think that ethnocentrism is a universal set of discriminating attitudes and behaviour , strongly connected with a given territory<sup>5</sup>. In their opinions, they stress the fact that ethnocentrism can often express itself in a form of hatred to certain nations, lack of trust to “strangers” and blaming them for failures and problems of one`s own group.

Ethnocentrism is similarly defined in psychological studies. A well-known French scientist N. Sillamy defines it as „widely existing mental attitude, which means that all social phenomena are related to those, with which we meet the most often because they are actually in our social group”<sup>6</sup>. In the above mentioned definition, the target is a human – a characteristic unit for a given

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<sup>3</sup> M.N., Khan, S.R. Rizvi, Consumer Ethnocentrism: Relevance and Implications for Marketers, The Icfai Journal of Consumer Behaviour 2008, Vol. III, No. 1

<sup>4</sup> Ibidem.

<sup>5</sup> Por. K. Chinen, Relations among Ethnocentrism, Product Preference and Government Policy Attitudes: A Survey of Japanese Consumers. International Journal of Management 2010, No. 27, pp. 107-116 and T. D. Nguyen, T.T.M Nguyen & N. J. Barrett, Consumer ethnocentrism, cultural sensitivity and intention to purchase local products: Evidence from Vietnam, Journal of Consumer Behavior 2008, No.7(1), pp. 88-100.

<sup>6</sup> N. Sillamy, Słownik psychologii, Wyd. Książnica, Katowice 1995, s. 87

group, which is often an unaware point of relation, which allows to judge other people. That is why individuals, whose behaviour is different from certain norms, were treated suspiciously<sup>7</sup>. Ethnocentrism is an attitude of a full acceptance of the members within one social group (family, nation) and disinclination to the members of another group.

American scholars - T. A. Shimp and S. Sharma brought the concept of ethnocentrism to the ground of marketing relations to the international scale. They were the first to define the term 'consumer ethnocentrism' and conducted wider empirical research in the USA, giving the beginning to the more detailed studies of this phenomenon in different countries of the world<sup>8</sup>. According to these authors consumer ethnocentrism is "a belief shared by consumers concerning obligation and morality of buying domestic products"<sup>9</sup>. Ethnocentric behavior of the customers concerns decisions connected to the choice, the purchase and the use of the domestic products.

Consumer ethnocentrism has the following characteristics<sup>10</sup>. Firstly, it derives from the concern about one's own country and for fear of losing control over economy, what may be caused by import. Secondly, it contains motives which incline to stop buying foreign products. For consumers who have high level of ethnocentrism, purchasing foreign products is not only a matter of economy, but it also creates moral problems. That is moral commitment which causes that consumers buy domestic products in extreme cases, even though their quality is much lower than imported products. Thirdly, it can be assumed that the consumer ethnocentrism level is the sum of individuals' tendencies being part of a given social group.

The consumer ethnocentrism consequence is thus: overestimation of domestic products, debasement of import meaning and feeling of moral obligation to buy domestic products, what consequently creates barriers for development of international trade.

The most important research tool, which serves to measure ethnocentric attitudes is elaborated by T.A. Shimp and S. Sharm's CETSCALE (Consumer Ethnocentric Tendencies Scale)<sup>11</sup>. This instrument consists of 17 questions to which answers are marked on the seven point Likert's scale, where 7 means "I absolutely agree", however 1 "I absolutely disagree". In the first version CETSCALE was meant exclusively for researches done in the chosen regions of the USA (most questions referred only to America) where it proved to be very reliable. In order to adapt, the above mentioned scale, to the needs of other countries the questionnaire was translated into several foreign languages. Then,

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<sup>7</sup> Ibidem.

<sup>8</sup> T. A. Shimp & S. Sharma, Consumer ethnocentrism: Construction and validation of the CETSCALE, *Journal of Marketing Research* 1987, 24(3), pp. 280-289.

<sup>9</sup> Ibidem.

<sup>10</sup> A. Szromnik A. Figiel, Etnocentryzm konsumencki jako bariera rozwoju i wymiany towarowej, [w:] *Wybrane problemy handlu międzynarodowego 1997, Materiały V ogólnopolskiej konferencji naukowej*; Akademia Ekonomiczna w Krakowie, Kraków 1997, s. 129-140

<sup>11</sup> T. A. Shimp, S. Sharma, Consumer ethnocentrism: Construction and validation of the CETSCALE, op. cit.

in order to eliminate all inaccuracies, the versions were translated into English again and tested on a chosen group of respondents..

It is also worth mentioning at this point, about the studies done on 1991. The validation of the CETSCALE in Germany, France and Japan was done during them<sup>12</sup>. It is also worth paying attention to the research done by T. L. Martinez and others (1998), who showed that the CET scale is appropriate and accurate for the inhabitants of Spain<sup>13</sup>. Similarly, in year 2002, R. R. Sinkovics did a survey on the territory of Austria and confirmed the reliability of the CETSCALE in this country<sup>14</sup>. A. Bawa also received similar results in 2004 by researching the consumers in India<sup>15</sup>.

In Poland, the first surveys concerning consumer ethnocentrism were done in the years 1994- 1995 by A. Falkowski and B. Rożnowski from the Catholic University of Lublin and in the years 1996-2002 by A. Szromnik and A. Figiel - the research scientists from the Trade Department and Market Institutions in Cracow University of Economics. Particular attention should be paid to the survey done in 2002 by the university in Cracow. The sample included 552 respondents (mainly students) from the chosen regions of Poland, Belarus, Ukraine, the Czech Republic, Slovakia and Germany, which confirmed the reliability of the CETSCALE on the above mentioned territory<sup>16</sup>.

## 2 Ethnocentric attitudes of Slovakian and Ukrainian consumers – the empirical data analysis

### The characteristics of the researched sample

As it has already been mentioned in the previous chapter, in the following article, the results of the empirical research has been presented. Its main aim was the analysis of the ethnocentric attitudes of Slovakian and Ukrainian consumers. The basic source material has been achieved thanks to direct interviews done in two cities which belong to Karpacki Euroregion: Koszyce (Slovakia) and Iwano Frankowsku (Ukraine), from December 2011 to April 2012. The research sample was 800 respondents<sup>17</sup> (400 people in every city), chosen in a quota way. The quotas were- gender, age and education.

<sup>12</sup> M.N., Khan, S.R. Rizvi, Consumer Ethnocentrism: Relevance and Implications for Marketers, The Icfai Journal of Consumer Behaviour 2008, Vol. III, No. 1

<sup>13</sup> T. L. Martinez, J.A.I. Zapata and S.B.Garcia, Consumer Ethnocentrism Measurement: An Assessment of the Reliability and Validity of the CETSCALE in Spain, European Journal of Marketing 1998, Vol. 34, No. 11/12, pp. 1353-1373.

<sup>14</sup> R. R. Sinkovics, International Business Research in Times of Structural Modeling: Is it Really that Simple to Transfer Scales?, Proceedings of 28th European International Business Academy (EIBA) Conference, Athens 2002, Greece.

<sup>15</sup> A. Bawa, Consumer Ethnocentrism: CETSCALE Validation and Measurement of Extent, Vikalpa 2004, Vol. 29, No. 3, pp. 43-57.

<sup>16</sup> A. Szromnik, A. Figiel, Porównanie etnocentrycznej orientacji konsumentów w wybranych krajach Europy Środkowo-Wschodniej [w] Handel Międzynarodowy 2002, wyd. Akademia Ekonomiczna, Kraków 2002, s. 581-590.

<sup>17</sup> The size of the sample complies with the requirements of the representative nature. It has been calculated on the basis of the formula:

$$n = \frac{\Pi(1 - \Pi)Z_{\alpha}^2}{E^2}$$
; where  $\Pi$ = population proportion, E = permissible mistake,  $Z_{\alpha}^2$ =the number of standard deviations

The CETSCALE questionnaire was used as a measurement instrument. It was translated into Slovakian and Ukrainian<sup>18</sup>. This instrument consisted of 17 questions to which answers were marked on the seven point Likert's scale, where 7 meant "I absolutely agree", however 1 "I absolutely disagree". In order to eliminate all inaccuracies in translation, which could cause lowered effectiveness of a given measuring tool, the CETSCALE questionnaire was submitted to the process of validation. According to the fact that the measurement was done only once, the validation was done in the range of internal consistency. The most adequate measurement in this case was the use of  $\alpha$ -Cronbach<sup>19</sup> factor. In the result of the calculations, which were carried out, it turned out that the discussed factor for the questionnaires in Slovakian and Ukrainian had values higher than 0.70. It means that both measuring instruments were correct – internally compliant.

The process of data collection took place in two phases. The first stage was a pilotage research- 70 respondents. The second one included the correct research, in the result of which the answers from 800 respondents were obtained.

The collected research material, after the previous reduction, was used to create a data base. The results of the questionnaire research were elaborated with the use of STATISTICA 7.0. programme. It was used to tabulation and classification of the sets of data based mainly on the scaling process. The ANOVA variance analysis and the linear correlation analysis have also been used at work, especially to determine dependencies which occur between the objects and features researched.

It should be stressed at this point that, in the following article, I concentrated mainly on the achieved results and their interpretation. Detailed methodological descriptions, conducted analyses, which are explained in detail in the literature in the range of statistics and econometrics, have been omitted.

### **The consumer ethnocentrism level research**

The direct research conducted among Slovakian and Ukrainian respondents defined an average level of consumer ethnocentrism in both researched communities. In order to do the intended task, the above mentioned international CET scale was used. It consisted of 17 questions, to which the answers were marked on the seven point Likert's scale. Summed points from the particular questions then, were between 17 to 119. The results of the comparison analysis showed that the CETSCALE value for people from Slovakia was 66,9

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por. S. Mynarski, Praktyczne metody analizy danych rynkowych i marketingowych (Practical methods of marketing and market data analysis), wyd. Zakamycze, Kraków 2000, s.40

<sup>18</sup> In Rzeszów, direct interviews have been conducted by the authors of the article and the respondents chosen to this aim. However, in Debrecen, the empirical material has been gathered by a group of employees of the consulting group - "Tö-Vill Kft." (székhelye: H-4220, Hajdúböszörmény, Széchenyi u. 5).

<sup>19</sup> J. Brzeziński: Metodologia badań psychologicznych (Methodology of psychological research). PWN, Warszawa 2011, s.475

points whereas for the Ukrainians 75,0 (table 1). This data indicate that the Ukrainians, in their marketing choices, show much bigger ethnocentric tendencies than the Slovaks. This diversity is crucial statistically, which is confirmed by the testing factor result of ANOVA variance<sup>20</sup> -  $p = 0,0000***$ , with the use of which an average level of prejudices to foreign products was compared in both groups.

Table 1

**The average CETSCALE values for the respondents from Slovakia and Ukraine**

Country	CETSCALE			
	N (the number)	$\bar{x}$ (the average)	Me (the median)	s (standard deviation)
<b>Slovakia</b>	399	66,9	66	20,7
<b>Ukraine</b>	400	75,0	77	20,0
<b><math>P_{ANOVA}</math> (test factor <math>p</math> of variance analysis ANOVA)</b>	<b>0,0000***</b>			

Source: own elaboration on the basis of the conducted research

It is worth paying attention to the graphic presentation, illustrating the structure (distribution) of the researched sample in reference to the CET scale values achieved (drawing 1). It turns out that 52% of the respondents (including 29% Slovakian and 23% Ukrainian respondents) achieved the sum of points from individual questions in the range from 50 to 80 (these are middle values). 21% of Iwano- Frankowsk inhabitants were characterised by a very high level of consumer ethnocentrism – over 80 points and only 9% of Koszyce inhabitants. However, the lowest CETSCALE values (in the range from 17 to 40) were in groups of 10% the Slovakian consumers and only 6% among the Ukrainian ones.

<sup>20</sup> The variance analysis (ANOVA) is a statistical technique which serves to compare an average level of the numerical feature in a few populations. In this test zero hypothesis is put, according to which in all the compared groups the numerical feature, which is taken into consideration, has the same average level. On the basis of the value of the probability test  $p$ , appointed on the basis of the variance analysis test, the hypothesis can be rejected (if  $p$  is adequately low), what in fact means the influence of the grouping factor on the numerical feature. Por. A. Luszniwicz, T. Słaby, Statystyka z pakietem komputerowym STATISTICA Teoria i zastosowania (Statistics with a computer set. Theory and the usage), Wydawnictwo C.H. Beck, Warszawa 2001, s 225, A. Zeliaś, Metody statystyczne, PWE, Warszawa 2000, s. 112-157



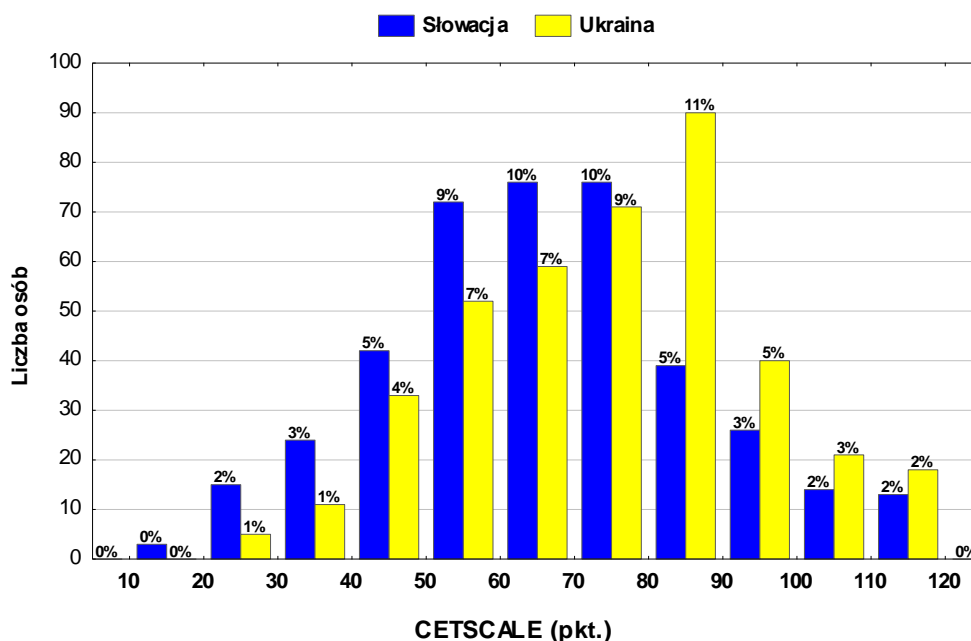


Figure 1

**The sample structure with reference to the achieved values of the CET scale**

The source: own elaboration on the basis of the conducted researches

In the research the analysis of the acceptance grade by the respondents of individual questions which are in the questionnaire has been done. In the table number 2 the information about the average scale values (grades) given by the respondents to individual questions and the test Manna-Whitney<sup>21</sup>, result, by means of which the differences in the points arrangement of the answers for Slovakia and Ukraine were researched.

It results from the data presented, that the highest number of points given by Slovakian and Ukrainian respondents were to the statements: “Slovakian (Ukrainian) products should be bought because they give employment to Slovaks (Ukrainians)”, “The whole import should be controlled” and “We should purchase products manufactured in Slovakia (Ukraine) instead of letting other countries get rich off us”. However, it is worth stressing the fact that 12 from the sentences (questions) were judged by the respondents of both communities in a different way. Significantly higher level of acceptance of particular statements in the Ukrainian group was observed. The most crucial differences, in particular, appear among the following statements: “Buying products made abroad is improper” – number 1, “Real Slovak should buy products manufactured in Slovakia” – number 2, “Slovaks (Ukrainians) who buy

<sup>21</sup> Manna-Whitney test is a non-parametrical alternative of *t* test for independent samples and serves to assess differences on an average level of a numerical characteristic. In contrast to the test Manna-Whitney's *t* test does not require the fulfilment of the following foundations: about the normality of distribution in each group as well as about so called variance homogeneity. What is more, Manna-Whitney's test can also be calculated as so called accurate test, that means that it reliably allows to compare the data even from very small samples. The strength of the test discussed is similar to the test *t* strength, what in smaller restrictiveness of assumptions, makes it attractive alternative of the *t* test. The numerical result of the test is test *p* probability. Its low values allow to say that there is a statistically crucial difference between the level of the numerical characteristic in two comparable groups. Por. Sokołowski A., *Estymacja i testowanie hipotez [w:] STATISTICA w badaniach naukowych i nauczaniu statystyki*, Wyd. StatSoft Polska, Kraków 2010, s. 25-60

products made abroad are responsible for unemployment in Slovakia (Ukraine)” – number 7, “Buying products made abroad is not Slovakian (Ukrainian)” – number 8, “Products manufactured abroad should be charged with high tax in order to limit their import to Slovakia (Ukraine) – number 12, “Trade and buying products made abroad should be limited to necessary situations” (14), “Foreigners should not be allowed to put their products on our markets” (16), and “Slovakian products should be bought because they give Slovakian (Ukrainian) people employment” – number 17.

Table 2

**The average values of the scale (assessment) assigned to particular questions by the respondents from Poland and Slovakia and the Manna-Whitney test**

Component CETSCALE questions	Country		PM-W
	Slovakia	Ukraine	
1. Buying products manufactured abroad is improper	3,24	3,98	0,0000** *
2. A real Slovak should buy products made in Poland	4,03	4,95	0,0000** *
3. We should buy products manufactured in our country. We should allow other countries to earn on us	4,52	4,87	0,0071**
4. Slovaks shouldn't buy products manufactured abroad because it hurts Slovakian business and causes unemployment	4,31	4,61	0,0131*
5. Slovaks should always buy products made in Slovakia instead of imported ones	3,89	4,32	0,0007** *
6. Slovakian products above all !	3,83	4,36	0,0000** *
7. Slovakian people who buy products made abroad are responsible for unemployment in Slovakia	3,04	3,86	0,0000**
8. Buying products made abroad is not Slovakian	3,15	4,28	0,0000** *
9. Only products unavailable in Slovakia should be imported	4,04	4,76	0,0000** *
10. In other countries we should only buy the products which cannot be produced in our country	4,18	5,07	0,0000** *
11. It is always better to buy Slovakian products	4,37	4,57	0,0469*
12. Products manufactured abroad should be charged with high tax in order to limit their import to Slovakia	3,64	4,05	0,0010** *
13. In longer time it may turn out to be more expensive, but I prefer to buy Slovakian products	4,18	4,08	0,4747
14. Trade and buying products made abroad should be limited to necessary situations	3,39	4,23	0,0000** *
15. Whole import should be controlled	5,07	5,13	0,7810
16. Other countries should be forbidden to introduce foreign products in Poland	2,84	3,42	0,0000** *
17. Slovakian products should be bought because they give	5,18	4,46	0,0000**

Slovaks employment			*
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**\**p*- Manna-Whitney`s test factor *p***

Source: my own elaboration on the basis of the conducted research

### The research of demographic factors on the CETSCALE values

The conducted empirical research also concerned defining the influence of demographic factors on the consumer ethnocentric level of the Slovakian and Ukrainian respondents. The above mentioned ANOVA variance was used to this purpose.

The data from the table number 3 indicate that there is no significant crucial difference in the CETSCALE value among women and men in Slovakia and Ukraine as well. It can be noticed, however, that the Slovakian respondents show stronger ethnocentric tendencies than men, however in Ukraine, a totally opposite tendency was observed – men are definitely more prejudiced against imported products.

Table 3

**Gender as a determinant of the CETSCALE value- the results of the inconsistency ANOVA analysis**

Gender	CETSCALE							
	COUNTRY							
	SLOVAKIA				UKRAINE			
	<i>N</i>	$\bar{x}$	Me	<i>s</i>	<i>N</i>	$\bar{x}$	Me	<i>s</i>
woman	207	68,2	67,0	19,1	218	73,6	74,0	20,5
man	192	65,7	64,0	22,2	182	76,7	78,0	19,4
<b><i>P</i> ANOVA</b> (test factor <b><i>p</i></b> of inconsistency ANOVA analysis)	0,2196				0,1190			

Source: my own elaboration on the basis of the conducted research

In the research dependencies between level of education of the respondents and the values of CET scale received have been analysed. The results of the analyses in the table 4 very clearly indicate that there are no crucial differences in summary CETSCALE, in the reference to three levels of education of Slovakian and Ukrainian consumers. However, the respondents with elementary and vocational education, in both countries, show a little higher ethnocentric tendencies than the respondents with secondary and higher education.

Table 4

**Education as determinant of the CETSCALE value - the results of the inconsistency ANOVA analysis**

Education	CETSCALE					
	COUNTRY					
	SLOVAKIA			UKRAINE		
	$\bar{x}$	Me	$s$	$\bar{x}$	Me	$s$
elementary and vocational	67,4	67,0	19,9	75,0	77,0	18,6
secondary and post-matura exam	67,6	66,5	20,5	76,1	76,5	21,5
higher education	66,0	64,0	21,2	72,9	77,0	18,2
<b><math>P_{ANOVA}</math></b> (test factor <b><math>p</math></b> of inconsistency ANOVA analysis)	<b>0,7651</b>			<b>0,3779</b>		

Source: my own elaboration on the basis of the conducted research

In order to illustrate the above dependencies more clearly, in the drawing 2 different CETSCALE values have been presented in sectional view of certain levels (groups) of the respondents' education. The chart includes – the average scale value, 95% of trust range<sup>22</sup> and typical changeability range for the results presented.

<sup>22</sup> It should be stressed that on the basis of an average, from a sample only, with limited trust, a range can only be given in which an average for the whole population ought to be. 95% is usually given as trust ranges for an average value. So 95% trust range defines the scope, which includes an average value of the size in the whole population ( it can be claimed with big probability) .

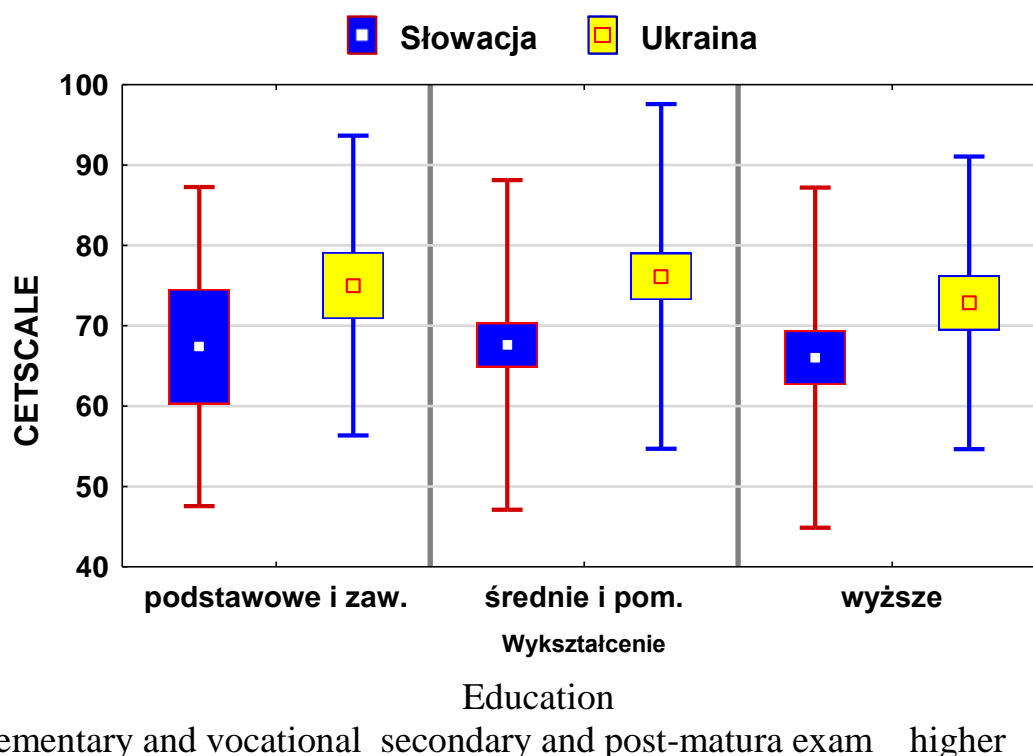


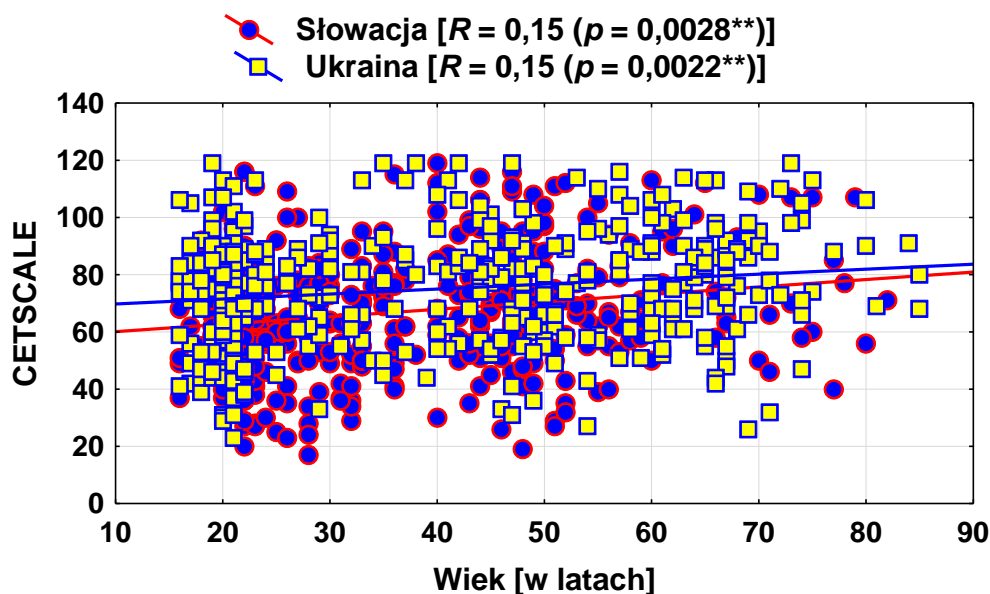
Figure 2

**The average values of CET scale depending on the level of Slovakian and Ukrainian consumers' education**

Source: my own elaboration on the basis of the conducted research

In the following research correlations which appear between the ethnocentrism level of Slovakian and Ukrainian consumers and their age has been established. In order to define the strength of connection between the researched features, line correlation analysis<sup>23</sup> has been used. The results have been illustrated on the spread graph, where correlation R factor values along with the assessment of its statistical relevance have been marked (drawing 3). On the basis of the data it can be stated that age is a factor which influences certain, not big CETSCALE value growth. The results are almost identical for both Slovaks and Ukrainians.

<sup>23</sup> Correlation factor R is a rate which receives values in the range of -1 to 1. Absolute value of a factor gives evidence for the correlation strength and a sign of its direction. The results may and should be completed by the results of the relevance correlation factor ( $p$ ): which would allow to assess if a dependency found in a sample is a reflection of a more general relation which is in the whole population, or is it a matter of coincidence.



Drawing 3

**Age as a determinant of CETSCALE value – the results of the linear correlation analysis**

Source: my own elaboration on the basis of the conducted research

## Final remarks

The results of the researches presented in the following work allow to formulate a few meaningful conclusions.

It can be generally stated that as well as Slovaks and Ukrainian consumers show ethnocentric tendencies, however there are crucial statistical differences between these two communities. The achieved CETSCALE value is the best evidence – Slovak respondents received 66,9 points and Ukrainian one were much higher with 75,0 points. In order to compare, it is worth mentioning the results of the international research done at this range. G. H. Brodowsky (1998r.), by analysing the answers of the given –representative group of inhabitants of the USA, defined the CETSCALE factor for them. It was on the level of 61,68. In turn G. Chryssochoidis in the year 2007 showed that the sum of points from the individual questions for the Greek was - 65,49<sup>24</sup>. However C. Y. Wong in 2008 r. claimed that Chinese people have ethnocentric tendencies (56,25 points)<sup>25</sup>.

In the following research the assessment of 17 statements (questions), which are part of CETSCALE questionnaire, has been made. Slovak respondents have given the biggest number of points to the statements: "Slovakian products should be bought because they give Slovakian people employment" (17) and the respondents from Ukraine gave the bigger number of

<sup>24</sup> G. Chryssochoidis, A. Krystallis, P. Perreas. : Ethnocentric beliefs and country-of-origin (COO) effect: impact of country, product and product attributes on Greek consumers' evaluation of food products. Eur. J. Mark. 2007, No. 41(11/12), pp. 1518-1544.

<sup>25</sup> C.Y. Wong, M.J. Polonsky, R. Garma R.: The impact of consumer ethnocentrism and country of origin sub-components for high involvement products on young Chinese consumers' product assessments. Asia Pac., J. Mark. Log. 2008, No. 20(4), pp. 455-478.

points to the statement: "In other countries we should only buy the products which cannot be produced in our country" (10).

It has been established, in the conducted empirical studies, that there are correlations between the level of consumer ethnocentrism of Slovakian and Ukrainian respondents and their ages. It results from the received data that in both chosen communities, older people show stronger ethnocentric tendencies in relation to foreign products.

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# INNOVATION AND ITS POTENTIALS

## INOVÁCIA A JEJ POTENCIÁLY

*Martin MIZLA*

### **Abstract:**

Innovation can bring dynamics to a company, but an innovation does not come without an internal effort of a company. The effort must be active in preparing internal conditions for innovations, i.e. to create an environment for having a positive potential for innovations. The second issue is about ways of the innovation potential measurement. The article presents several tools related to innovation potential measurement.

### **Keywords:**

innovation, potential. SME

### **Abstrakt:**

Inovácia môže do podniku priniesť dynamiku, avšak neprichádza bez vynaloženého vnútorného úsilia. Toto úsilie musí byť aktívne pri príprave vnútorných inovačných podmienok, teda vytvárať prostredie na vytvorenie pozitívneho inovačného potenciálu. Druhou oblasťou je spôsob merania inovačného potenciálu. Príspevok predstavuje niekoľko nástrojov spojených s jeho meraním.

### **Kľúčové slová:**

inovácia, potenciál, MSP

## **Introduction**

After waves of higher interest about reengineering, quality management, and corporate culture, the innovations are hot solutions for success, survival and development today in turbulent environment today. Innovation and its management is not one of imperatives today; but it is one of basic company's internal factors of dynamics.

The concept of innovation and its role in competitiveness is not a new fashion; it comes with Schumpeter (1934) at least. There are different angles to see an innovation and a process of innovation. We can say that an innovation is based on novelty, i.e. an innovation is a difference from what we have and what has existed before now. If the difference can bring economical earnings by clients' satisfaction then it has open doors into companies.

The next step is an ability of a company to foster innovations. It means not to be passive in searching for opportunities, but to be active in preparing internal conditions for innovations – to have a potential for innovations. The

paper is focused on this potential and ways of its measurement<sup>26</sup>.

## Potential definition and description

The word potential can be understood and used in different meanings. The first source for its understanding is browsing of dictionaries. The most used dictionaries as the Merriam Webster Dictionary (Merriam, [http](http://)) and the Oxford Dictionary (Oxford, [http](http://)) are very concise about the term: it is something existing in possibility, it is the possibility of something happening or of someone doing something in the future. Possibility in this sense can be seen as something opposed to actual. The second stream of meanings is about capability of development into actuality, about capability of becoming.

A potential as an ability is seen as a change between two statuses (Mizla, Bašistová, 2002, p.96) – existing one and desired one. The trajectory among them is the change itself. It is possible to talk about fitness for change in the case when the potential of a company is higher. An unused potential represents idle capacity of the company. It is a question of life to discover it.

The turbulent environment of economic life comes with more risks, but in opposite, with more chances, too. A risk can be seen as acts and results of negative activities, and a chance can be seen as opportunity realised by existing conditions and abilities. To discover a potential is also about chances and their discovering. An organisation is in a normal state when risks and chances are approximately balanced. The normal state has its boundaries represented by unusual situations.

A potential is the difference, declination from a normal state; a difference from what is and what should be. A potential can act as an offer (source, transmitter) in case of surplus or as a need in case of scarcity. Potentials can stay in same, neutral or opposite direction as the realized change; or we can say that the potential has negative, neutral or positive sign. Opposed potentials, i.e. with opposite signs, create conjunction and synergy while potentials with same signs (positive or negative) create repulsion.

The conjunction has its manifestation in two opposite groups of people: for a change (positivists) and against the change (negativists). While the both groups are in opposition, their behavior is in conjunction. Positivists are looking for the best way of realization of the change and negativists are looking for weak points of the change, i.e. they are internal opponents who, by complaints, give signals to positivists for improvements of their activities.

The repulsion lay in different sorts of changes or in different ways of their realization. Formally, the both groups consists from positivists or negativists

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<sup>26</sup> The paper represents part of results of research topic Modelling of innovation causal relations in SMEs (Modelovanie kauzálnych vzťahov inovácií v malých a stredných podnikoch - VEGA 1/0328/13).

only, but they struggle (mostly as informal political alliances) for prioritization of their way of solution. As a result we can summarize that while we talk about potentials of an organization, groups of people are holders of the potential, and they are factual implementators of changes. We must remark that size of the both potentials is not symmetrical – one of them is usually stronger.

Dynamics of potentials shows that there are small positive and negative potentials at the beginning. The positive potential, i.e. a need for change, is getting growth. The need and size of the potential usually culminate at some period of the change and then a negative potential starts to growth. Thanks to this, the negative potential starts to retard the change and leads a company to a stabile status sooner or later.

### **Concept of innovation**

Peter Drucker (1985, p.6-10) said that “*the two drivers of business growth are innovation and marketing.*” He also declared that the most successful innovations arise from "a conscious, purposeful search for innovation opportunities, which are found only in a few situations," exactly seven:

1. Unexpected occurrences.
2. Incongruity.
3. Process needs.
4. Industry and market changes.
5. Demographic changes.
6. Changes in perception.
7. New knowledge.

Drucker also showed by examples (e.g. the first commercial banks, first computers) that innovation based on new knowledge has the longest lead time and is the least predictable. Innovative companies aren't just exceptionally lucky, but they have processes in place which nurtures innovation.

The ongoing economic crisis creates both short- and long-term pressures to change orientation of enterprises and other types of organizations. Currently, the organization lays the foundations of its long-term competitiveness (Fig. 1) by developing a combination of innovation, methods for streamlining the organization of work and increasing productivity.

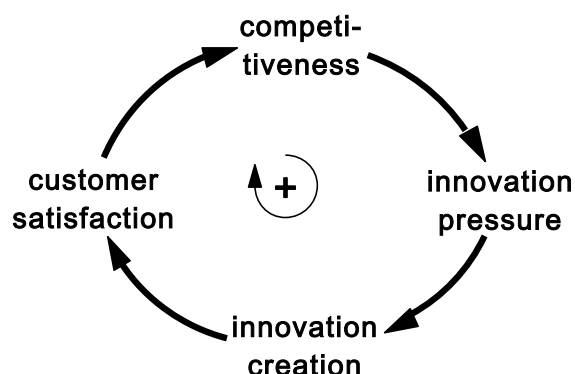


Fig. 1

**Basic innovation causality setting**

Source: author

There are many different descriptions and definitions of innovations. One of possible approaches to this concept is such understanding of innovation as a specific type of a useful change. The change is specific with its different representations and forms which is new to its customer. The most significant attribute is novelty – novelty of goods, services, processes or solutions – which have never been used in the entire world. This we can understand as a broader view. Notion, idea with its realisation should go hand in hand. In this case, the idea is confronted and confirmed by its own realisation and vice versa – good realisation has very positive influence to generation of more new innovation hints and ideas.

It is possible to understand innovation also as a way for commercialization of a novelty. In this case, the novelty is represented by changes in areas which are called by Tidd, Bessant and Pavitt (2007, p.549) as Innovation 4Ps:

1. **Product innovation** – changes in goods, services and ideas offered by a firm in way of product usage.
2. **Process innovation** – changes in ways of procurement, production, delivery etc. of a product realised mostly by changes in technology.
3. **Position innovation** – changes in product promotion, more generally in product marketing, by new market segmentation or looking for new groups of customers.
4. **Paradigm innovation** – changes in mental models of firms operations represented by new business models and by new ways of process organisation.

Each partial change as an innovation has always its main focuses directed to one of the 4Ps. Areas of 4Ps are not isolated, but they interact and influence each other. In this way, it is not possible to say that an innovation is oriented exclusively to one of them. If we assume that an innovation has its measures and its magnitude, what is not described in this article, then an innovation has its

magnitude higher than zero in every of the areas. Zhang and Xiao (2007, p.151) assume that there is an innovation trajectory among the areas. The trajectory has shape of a spiral moving through the areas. It means that there is not only one rotation for an innovation, but the innovation moves through the areas several times during its cycle of life in many rotations. What is more, the same novelty can represent itself in different ways, with different focuses, i.e. one novelty can be naturally interpreted by different groups as different kinds of innovations.

## **Innovation process**

One of paradigms about innovations is that an innovation is one of acts which can ensure a good business position in a future. If it is so, than innovation and mainly the process of innovation, according to the process orientation management, should be discovered, unlocked and utilised primarily. Any given concept or idea may or may not work, but the process over time does indeed work.

Innovation is a process by which organizations direct their resources to obtain benefits from science, technology and marketing opportunities. The mission of the innovation process is to create a new product and put it on the market (Fig. 2). The whole process starts with the selection of appropriate ideas and identify possible benefits of a new product goes through various testing until its final commercialization of placing on the market. A particular innovation is realized by the project. The amount of concurrent innovative projects in an organization depends on the saturation of resources organization, namely the capability of organizations to manage innovative projects.

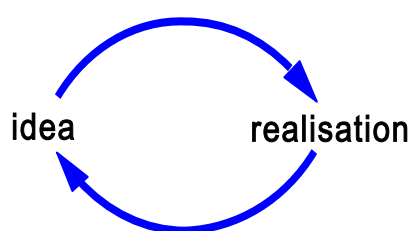


Fig. 2

### **Basic innovation process**

Source: author

## **Tools for innovation potential measurement**

Drucker also mentioned that innovation is hard work, not genius. It is not enough to think and to meditate about an innovation and an innovation potential, but it is important to know how big or small it is, whether there are positive

changes, how significant they can be, how effective effort of managers to increase it exists. There is a simple and straight need of a group of indicators who can measure the potential. The indicators can play a role of a mental bridge between what is now state and a future one using innovation and creativity.

Very simple tool for innovation potential measurement is a self-evaluating questionnaire Boost your Innovation Potential used by CRECIS<sup>27</sup> (2013) mainly for areas:

1. Shared strategic vision.
2. Entrepreneurial resources.
3. Proactive deal flow.
4. Balanced portfolio.
5. Nimble execution.
6. Overall achievement.

Each of areas consists of several questions with traffic lights-like scaled answers. It is important to know weak positions coloured by red lights and to act in “green” directions.

Different approach to innovation potential measurement has Kastle (Kastle, <http>) with his two-dimensional Innovation Matrix (Fig 3). The horizontal axis represents Innovation Commitment - innovation as a core value which is integrated into strategy, there is a supporting and improving system, resources available – and measures innovation inputs and innovation success. The vertical axis represents Innovation Competence – number of implemented innovations, innovation portfolio - what is about the ability to generate and executing new ideas successfully and outputs measurement. There are activities related to certain positions in the grid.

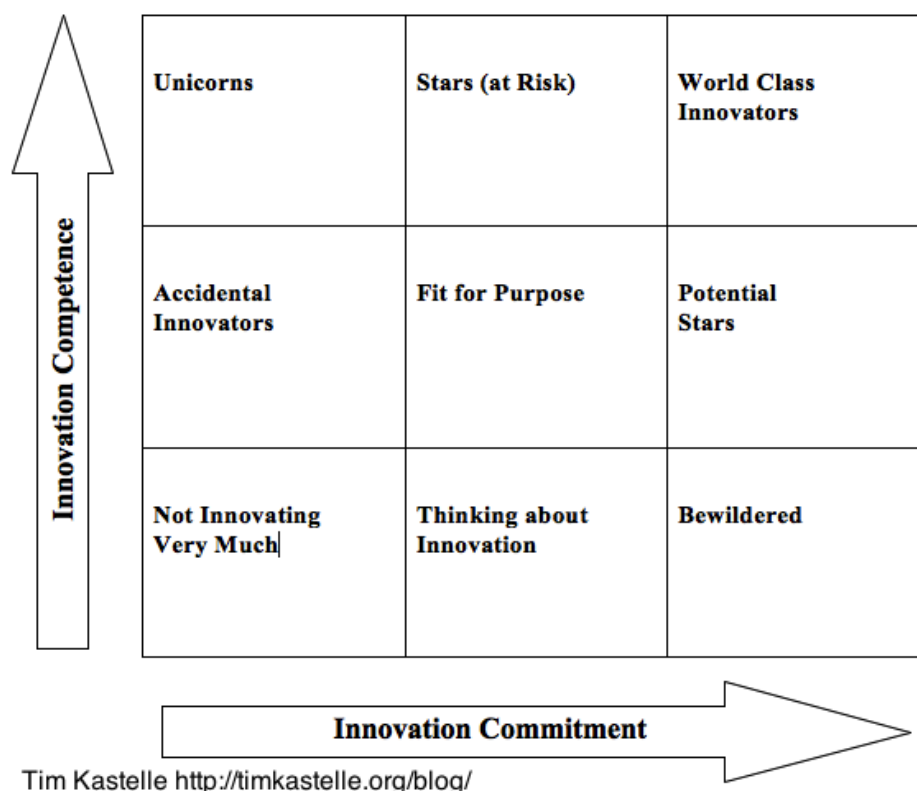


Fig. 3

### Innovation Matrix

Source: Kastle T., 2012

The next approach is related with sets of innovation potential indicators from different more or less linked areas. For example, in human resources management, the set of innovation potential indicators used by OPP (2013) measures basic areas of activities: motivation to change, challenging behaviour, adaptation, consistency of work styles, and social desirability. The set can give a picture about future competitiveness, ability to develop and motivate employees, and to select key people in an organization from innovation point of view as well as to organize them to teams. According to the source, employees can be divided to the groups: change agent, consolidator and catalyst.

The finance also has its own set of indicators, too. This area uses as indicators different models of financial stability with its indexes, e.g. equity capital to borrowed capital, etc. The idea behind it is to examine and test the financial stability of a company after an innovation realisation, i.e. whether a company has enough working capital for realisation of an innovation. One of methods is in Sorescu, Chandy and Prabhu (2003) for radical innovations; a different approach is used by Bondareva (2012, p. 117-128).

The last mentioned method of innovation potential measurement by areas in this paper is maturity approach used firstly in project management and then in more areas, e.g. knowledge management. There are criteria to measure an ability



of a company to realize a project of innovation, e.g PRINCE, OPM3, P3M3 etc.

The forth source for innovation potential measurement are reasons why innovations are not successful, i.e. innovation potential barriers. The barriers acts against innovations and can decrease innovation potential. It can be done e.g. by formal declaration of pro-innovation activities. Cross (Cross, <http>) has recognized three main types of innovation barriers which he calls killers:

1. **Strategic Killers** – incremental goals, focusing resources on defending existing businesses at the cost of creating new income streams, and excessive and conflicting priorities.
2. **Organisational Killers** – unclear accountabilities, too many management layers, a reliance on small, internal R&D or equivalent teams for all innovation, and an over-reliance on planning
3. **Attitudinal Killers** – a desire for a magic pill solution (rather than a daily exercise regime), a belief that customers can simply tell you what new innovation they want (when, in fact, customers are poor at predicting their own future behaviour), a requirement to ‘get it right first time, every time’, and, most importantly an intolerance or fear of failure.

The barrier and their analysis can help to set criteria which can discover internal obstacles to innovation. The next step then should be any elimination of these killers measured and monitored by the set of criteria.

As mentioned above, innovation management should increase income and profit. As it is mentioned by Balfanz (2009), the best SME<sup>28</sup> companies were reaching approximately 12% operational margins, an exceptional performance compared to the 5% operational margin of the average SME. According to the mentioned authors, SMEs were very good in installing some kind of structured management processes, because it is vital for their business success. The average SME lacks skilled personnel to adapt and introduce new management processes. It is also mentioned that in most cases Innovation Management (IM) is not the first instrument being established. However their future depends on their ability to offer innovative products and services and the ability to innovate in their business processes. Managing the entire process requires a clear innovation strategy, an organizational culture that supports innovation, and processes that ensure that the innovation ideas are developed adequately. The result of their research is IM approach and methodology in particular targeted to SMEs, called SLIM (SME-centric Lean Innovation Management) (Balfanz, 2009).

The research presented several obstacles to IM implementation. The author mentions mainly internal commitment because IM is seen as a parallel initiative to other management approaches. As a recommendation, it is better to implement IM as a supplement to existing strategy linked by IM indicators and business performance indicators. Preconditions for SMEs are (i) existence of a

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<sup>28</sup> SME = small and middle sized enterprises

single person or a small team responsible for an innovation, and (ii) previous experience with strategic planning and processes because of targeting the early innovation phases. SLIM realize the IM by organisational structures, roles, processes and documents (templates) adapted to company specific needs.

It must be mentioned that there are several imaginations of future predictions. Linear trends are used in general. From this point of view is interesting work of Marketing2win (2012) which explains a vacuum effect of innovation potential with formula:

$$\text{Potential of innovation} = \text{Capability} - \text{Utilization.}$$

The innovation potential has exponential curve and exponential growth.

## Conclusion

To know innovation potential can be helpful for companies. There are many approaches what and how to measure to get a picture more or less simply and precisely. We can summarize several points:

- 1) There are different areas for measurement:
  - a) Organizational motivation: indicates committed to innovation and level of support for creativity and innovation,
  - b) Resources: people, funds, time and information available to support innovation efforts,
  - c) Management practices: goals, feedback, reward, creativity, the management style, innovation killers (it is enough to mention just dogmatic, conservative, directive management).
- 2) Usually it is not enough to get information about the innovation potential from one area only, but there is presented a struggle between complexity and ability to realize and summarize results from different areas and methods. The future is seen in research of this field and looking for different more complex approaches and methods.
- 3) There is a significant effort not to measure a present status, but an attempt to make prognosis of innovation impacts to a company. This effort is mostly visible in finance.
- 4) Even for imperfections in measurement of innovation potentials today, it still useful to get even an approximative picture of own latent excellence in future.

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# BALANCE SHEET STRUCTURE AS DETERMINANT OF COMPANY EARNINGS

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## **Abstract**

There exist a sizeable amount of literature focusing on the relationship between leverage and profitability of the company. However, relatively little attention has been given to informational content of assets structure and its impact on firm performance. In this paper we employ artificial neural networks and conventional statistical techniques in order to estimate return on assets of global leading non-financial corporations. We show that neural networks significantly outperformed conventional regression methods in terms of mean squared error and prediction accuracy and are more capable of fitting complex nonlinear patterns occurring in the data. Our evidence is inconsistent with agency cost hypothesis and suggests that corporate earnings are positively affected primarily by level of available cash and increasing equity ratio instead of leverage.

## **Keywords:**

Balance sheet. Company earnings.

## **Introduction**

Studies on the connection between balance sheet structure and profitability of the company have an extensive history in the financial and investment analysis. Since the pioneer work of Modigliani and Miller (1958) who declared that under several conditions is the capital structure irrelevant to the financial performance, a number of studies have been presented showing that capital structure does matter considering market imperfections and frictions. At present the main theories describing relevancy of capital structure are the agency cost theory, the static trade-off theory and the pecking order theory. The agency cost theory (Jensen and Meckling, 1976) argues that optimal capital structure is determined by different interests of shareholders and managers as well as conflicts between shareholders and debt holders. Leverage is assumed to lower the agency costs and through threat of personal losses encourage managers to act in favor of shareholders and increase profitability (Williams, 1987). On the other hand, excessive issuance of debt increases the likelihood of company financial distress and bankruptcy, which rises the cost of debt in terms of higher interest premiums. The static trade-off theory (Kraus and Litzenberger, 1984; Myers, 1984) examines the costs and benefits of issuing debt and aims at optimal target level of leverage that maximizes the value of company. Besides the tax shield debt financing also limits the free cash available to managers and therefore reduces the above mentioned agency costs (e.g. Harvey et al., 2004). According to the pecking order theory (Myers, 1984; Myers and Majluf, 1984), companies have preference order for capital used to finance their investments rather than target capital structure. Since insiders have more relevant information than outsiders, the new business is primarily financed by retained earnings, then by

issued debt, and finally by new equity. Issuing equity becomes more expensive with higher information asymmetry and such company issues debt to avoid offering low priced shares.

Supporting agency cost theory, Margaritis and Psillaki (2007) proved that higher leverage is associated with improved efficiency. Dudley (2012) and Buettner et al. (2009) focused on target leverage ratios and Chakraborty (2010) applied modified ordinary least squares supporting two alternative theories of capital structure. Effect of leverage on agency costs using profit efficiency and best practice benchmark approach was tested by Berger and Bonaccorsi di Patti (2006). Their findings on sample of banking institutions were consistent with agency costs hypothesis-theory that lower equity ratio is associated with higher profit efficiency. While King and Santor (2008), De Miguel and Pindado (2001), Huang and Song (2006), Lipson and Mortal (2009), Kayo and Kimura (2011) and Abdou et al. (2012) examined various factors that determine capital structure, Harris and Raviv (1991) stated that leverage increases with firm size, fixed costs and investment opportunities. Dang et al. (2012) developed a dynamic panel threshold model to estimate speed of adjustment of capital structure towards target leverage. Capital structure adjustment was also researched by Cook and Tang (2010) and Mateev, Poutziouris and Ivanov (2013). A number of novel results in the field were provided by investigating relationships between balance sheet structure and future stock returns. Hirshleifer et al. (2004) and Papanastosopulos, Thomakos and Wang (2011) demonstrated strong negative relation of net operating assets with future stock returns. Their results also provided findings that net operating assets is a noticeable measure of investor's optimism about the tenability of current earnings performance. An intensive coherence between total asset growth and stock returns was provided by Cooper, Gulen and Schill (2008). They stated that total asset growth is a more suitable indicator of future returns rather than single component of growth, contrary to Carlson, Fisher and Giammarino (2004) or Broussard, Michayluk and Neely (2005). Their outcomes were confirmed by Gray and Johnson (2011) on Australian stocks data.

In this paper, we apply artificial neural networks together with more traditional linear models in order to disclose empirical evidence on informational capacity of balance sheet for the estimation of company profitability. Our focus is on the return on assets (ROA) which is one of the most important financial ratios measuring the ability of the company to generate net income relative to its total assets. Extensive research has been done to compare performance of artificial neural networks and conventional statistical methods in business and finance. They have been recently used for financial prediction problems by Zou et al. (2007), Yu, Wang and Lai (2009), Khasei and Bijari (2010) or Yu and Huarng (2010). Pao (2008) applied neural networks and multiple linear regressions to analyze important factors of capital structures of high-tech industries in Taiwan. He discovered that major determinants are growth opportunities and business risk. Comparing the root mean squared error,

neural networks significantly outperformed standard regression models. Notable amount of research about neural networks has been done with data from stock markets, such as Lam and Lam (2000), O'Connor and Madden (2006) or Hamid and Iqbal (2004) and Kuo (1998). Chen, Leung and Daouk (2003) compared outcomes of neural network with that of generalized method of moments and demonstrated that neural network based investment strategies yield the largest gain. Most researchers conclude that neural networks are efficient in terms of their ability to solve complex nonlinear problems in reasonable time and usually overcome their more conventional counterpart techniques (Huarng, Moutinho and Yu, 2007).

Although much theoretical work has been done to explore and define relationships between company leverage and profitability, there are no consistent results considering additional informational content of firm assets composition. The research approach adopted in this work aims at answering two hypotheses: (1) does company assets structure, together with the level of leverage determine the profitability in terms of ROA; (2) do artificial neural networks provide better ROA prediction model fitting than standard linear methods. The rest of the paper is organized as follows. Section 2 presents the data, the definition of variables, and methodologies. Section 3 presents results of artificial neural network and standard regression models whereas the final section contains the summary and conclusions.

## 2 Data and methods

Our dataset comprises of the 200 world leading non-financial companies according to sales from 2006 to 2011 which represents 1200 firm-year observation panel dataset. Table 1 presents the companies in the data sample according to their industry and Table 2 illustrates summary statistics of the variables used in the estimation.

Table 1

### Structure of the sample

Sector	Number of companies	%
Retail	45	22,50%
Oil & Gas	30	15,00%
Commodities	31	15,50%
Utilities & Services	26	13,00%
Automotive	19	9,50%
Technology	34	17,00%
Healthcare	15	7,50%
Total	200	100,00%

Table 2  
Summary statistics

Variable	Mean value	Std. Deviation	Min	Max
Return on assets	0,06964	0,05770	-0,19052	0,41484
Cash to assets	0,07762	0,07634	0,00000	0,61069
Debt to assets	0,24731	0,14114	0,00000	0,73083
Inventories to assets	0,08209	0,06736	0,00000	0,40307
Long term investments to assets	0,06031	0,07137	0,00000	0,52323
Retained earnings to assets	0,28619	0,26261	-1,47040	1,19290
Receivables to assets	0,13957	0,08931	0,00144	0,85734
Fixed assets to assets	0,29401	0,19001	0,00093	0,93961
Equity to assets	0,37436	0,16726	0,07280	0,87032

We use return on assets (ROA) as dependent variable and ratios of cash to assets (CA), debt to assets (DA), inventories to assets (IA), long term investments to assets (LIA), retained earnings to assets (REA), receivables to assets (RA), fixed assets to assets (FAA) and equity to assets (EQA) as explanatory variables. In neural network prediction task 840 samples (70%) are used as in-sample and rest is the out-of sample data for models. In case of conventional techniques we omit out-of sample data and focus on ability of model to fit the balance sheet data.

### 2.1 Standard regressions

For the purpose of testing the connection between profitability of the company and its leverage combined with assets structure, we propose following multiple linear regression for the data sample. (Tkáč, 2001)

$$ROA_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 DA_{it} + \beta_3 IA_{it} + \beta_4 LIA_{it} + \beta_5 REA_{it} + \beta_6 RA_{it} + \beta_7 FAA_{it} + \beta_8 EQA_{it} + \varepsilon_{it},$$

where  $N$  is the total number of companies,  $T$  presents the length of the observed time series and  $\varepsilon_{it}$  is the error term. The estimation procedure was performed by fixed effects model and feasible generalized least squares model. If we define the error term as  $\varepsilon_{it} = \mu_i + \nu_{it}$ , where  $\mu_i$  means an unobservable individual specific effect and  $\nu_{it}$  denotes the remainder error, fixed effect model (FE) assumes  $\mu_i$  to be fixed parameters to be estimated and the remainder error  $\nu_{it}$  to be independent and identically distributed. Regressors  $X_{it}$  are assumed to be independent of the  $\nu_{it}$  for all  $i$  and  $t$ . Resulting estimator can be written as<sup>29</sup>  $\hat{\beta}_{FE} = (X^T Q X)^{-1} X^T Q Y$ , where matrix  $Q$ , defined as  $Q = I_{NT} - P$ , eliminates unobservable individual specific effects.  $I_{NT}$  is an identity matrix of dimension  $NT$  and  $P = (Z_\mu^T Z_\mu)^{-1} Z_\mu^T Y$  is a projection matrix, where  $Z_\mu = I_N \otimes i_T$  represents the matrix of individual dummies that might be involved in the regression to

<sup>29</sup> In contrast to standard ordinary least squares estimator  $\hat{\beta}_{OLS} = (X^T X)^{-1} X^T Y$



estimate fixed  $\mu_i$ .  $I_N$  denotes an identity matrix of dimension  $N$ ,  $\otimes$  denotes Kronecker product and  $i_T$  is a vector of ones of dimension  $T$ .

Above mentioned definition of  $\varepsilon_{it}$  assumes that the error terms have constant variance across individuals and time, i.e. are homoscedastic. This might be very limiting for panel data, since the violation of this assumption results in consistent but no longer efficient estimates of regression. Feasible generalized least squares (FGLS) model relaxes the assumption of homoscedasticity of the error terms and secure asymptotically efficient estimates. FGLS estimator is defined as  $\hat{\beta}_{FGLS} = (X^T \hat{\Omega}_{FGLS}^{-1} X)^{-1} X^T \hat{\Omega}_{FGLS}^{-1} Y$ , where  $\hat{\Omega}_{FGLS}^{-1} = \hat{\Sigma}_{FGLS}^{-1} \otimes I_T$ .  $I_T$  again denotes an identity matrix of dimension  $T$  and  $\otimes$  denotes Kronecker product. Components of  $\hat{\Sigma}_{FGLS}^{-1}$  are estimated by means of OLS residuals. Both techniques are suitable for our data sample and their rigorous description can be found in standard econometric textbooks.

## 2.2 Artificial neural networks

Artificial neural networks are computational structures based on simulation of the biological central nervous system. This simulation borrows from the knowledge of biological neurons and, contrary to other computational methods, by using relatively simple mathematical operations they are able to solve ill-defined, nonlinear or stochastic issues. Another benefit of neural networks is that they function in a parallel manner and therefore are insensitive to deterioration of several neurons. A single neuron is an information-processing unit that is fundamental to the functioning of a neural network.

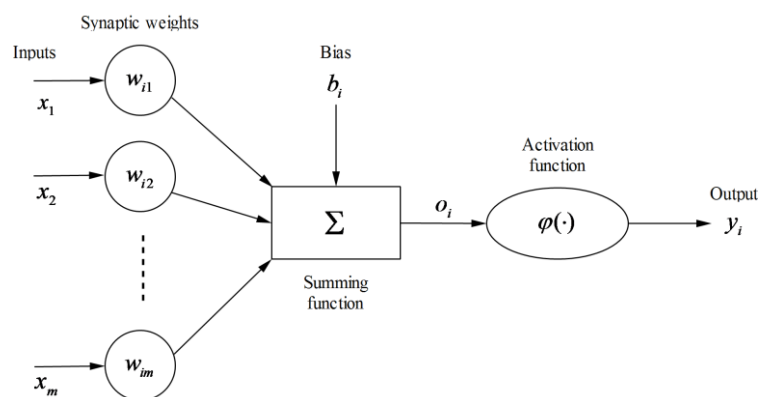


Figure 1  
**Artificial neuron**

Figure 1 depicts the model of an artificial neuron. Each connection is determined by its *weight*. Signal  $x_j$  at the input of synapsis  $j$  linked to neuron  $i$  is multiplied by weight  $w_{ij}$ . The neuron sums all the inputs it receives, with each input being multiplied by affiliated weight on the synapsis. Activation function restricts the amplitude range of the neuron output to some limited value.

Neuron  $i$  can be defined  $y_i = \varphi(s_i + b_i)$ , where  $s_i + b_i$  denote activation potential  $o_i$  and  $s_i = \sum_{j=1}^m w_{ij}x_j$ .  $x_j$  denote neuron inputs and  $w_{ij}$  represent synaptic weights.  $\varphi(\cdot)$  is activation function, most often sigmoid functions with s-shaped curve defined as  $\varphi(o) = 1/[1 + \exp(-ao)]$ , where  $a$  represents a constant defining shape. Network architecture designates the way individual neurons are connected and organized. Multilayer feedforward network contains one or more hidden layers with hidden computational neurons. By adding hidden layers, the network acquires the ability to extract high-order statistics, especially with larger size of the input layer. The output signals from the previous layer are applied as input signals to the next layer.

The main advantage of a neural network is the capability to learn from the data by iterative process of adjustments performed on its connection weights and biases. Every accomplished iteration should increase its understanding of the surrounding environment. External impulses make the network modify its free parameters and due to consequential changes in internal structure, network responds to the impulses in a new way. Selected learning algorithm was the Levenberg-Marquardt method (Levenberg, 1944; Marquardt, 1963). It updates connection weights as  $\Delta w(n) = -[J^T(n)J(n) + \mu I]^{-1}J^T(n)e(n)$ , where  $J$  is the Jacobian matrix comprising of first derivatives of the network errors with respect to the connection weights,  $\mu$  is regulation constant and  $e_i(n) = t_i(n) - y_i(n)$  denote network errors resulting from difference between data targets and network outputs.

Even though artificial neural networks do have several limitations, many studies proved their efficiency and predictive performance. Focusing on relationship between company balance sheet structure and its earnings, the aim of this work is to explore the accuracy of neural network estimates and confront obtained results with standard regression methods.

### 3 Results

Table 3 presents results of fixed effects model in form of estimated coefficients,  $t$  statistics and  $p$  values. Fixed effects model suggests that level of disposable cash, retained earnings, debt and equity have most statistically significant influence on profitability from observed balance sheet items. Ratio of inventories to assets is significant on 5% significance level.

Table 3

**Results of fixed effects model**

	Coefficient	t-ratio	p-value
constant	0,0110	1,0100	0,3127
Cash to assets	0,1547	5,0830	0,0000
Debt to assets	-0,0435	-2,7390	0,0063
Inventories to assets	-0,0645	-2,3650	0,0183
Long term investments to assets	-0,0257	-1,0440	0,2970
Retained earnings to assets	0,0739	8,2680	0,0000
Receivables to assets	-0,0021	-0,1031	0,9179
Fixed assets to assets	0,0142	1,2660	0,2060
Equity to assets	0,1010	6,4270	0,0000

According to the model, levels of long term investments, receivables and fixed assets are not related to the company profitability in terms of return on assets. Results that profitability decreases with leverage are indicated by both negative debt to assets coefficient and positive equity to assets ratio coefficient. The sign of the relation is consistent with Gaud et al. (2005) who empirically confirmed that growth and profitability are negatively associated with leverage and validate the pecking order theory stating that companies in general prefer internal financing. Positive influence of available cash on accounted profit is confirmed by coefficients of disposable cash and retained earnings. Applied model reveals that the least relevant explanatory variable based on the examined sample is the level of receivables.

Outcomes for feasible generalized least squares model are presented in Table 4. In compliance with previous method, results imply that most significant variables are again the level of disposable cash, retained earnings and equity. Significance of debt to assets declined to trivial. Ratio of inventories to assets is significant on 10% significance level. Positive influence of available cash on earnings is again validated by coefficients of disposable cash and retained earnings.

Table 4

**Results of feasible generalized least squares model**

	Coefficient	t-ratio	p-value
constant	0,0052	0,6417	0,5212
Cash to assets	0,1095	3,5010	0,0005
Debt to assets	0,0008	0,0686	0,9453
Inventories to assets	-0,0400	-1,7820	0,0751
Long term investments to assets	-0,0291	-1,1230	0,2619
Retained earnings to assets	0,0964	11,3000	0,0000
Receivables to assets	-0,0152	-1,2400	0,2155
Fixed assets to assets	-0,0013	-0,1484	0,8821
Equity to assets	0,0861	5,9400	0,0000

Table 5 summarizes achieved outcomes of all applied methods. In addition to mean squared error and determination coefficient, performance of models was measured also by two informational criteria. Results of conventional

regression models in terms of fitting the data are not satisfactory and neural network with Levenberg-Marquardt learning algorithm significantly outperformed both fixed effects model (47,62%) and feasible generalized least squares model (29,64%) with determination coefficient of 93,27%. From the Table 5 we also conclude that neural network reached the lowest mean squared error values for presented out-of-sample profitability data.

Table 5

**Performance of models**

Measure	FE	FGLS	NN
MSE	0,00174	0,00215	0,00165
Determination coefficient	0,47621	0,29637	0,93273
Akaike criterion	-2656,98	3967,08	-2044,46
Hannan-Quinn criterion	-2388,49	3983,41	-2140,57

Looking at the differences between coefficients obtained by FE and FGLS presented in Table 3 and Table 4, we have to take into consideration the poor overall performance of feasible generalized least squares in all four measures investigated above. Informative value of FGLS is therefore rather poor and we prefer FE estimates of independent variables coefficients. Values in Table 5 suggest that the relationship between the structure of company balance sheet and its profitability involve nonlinear patterns. In order to confirm the statement we applied nonlinearity test proposed by Ramsey (1969). RESET test rejected adequacy of linear specification on 5% significance level and confirmed the possibility of more complex impact of balance sheet on profitability. Best values of information criteria were achieved by fixed effect model, followed by neural network.

Unfortunately, the nature of neural networks does not allow us to directly determine the impact of individual items of the balance sheet on the performance of the company and confront above mentioned theories. But we are able to predict the profitability examining the structure of balance sheet significantly better than applying standard regression models. Based on the obtained results it is indisputable that the structure of the company balance sheet has a significant impact on its profitability in terms of ROA, as confirmed by the determination coefficient reaching almost 93.3%.

## Conclusion

In this paper we focused on the ability of assets structure and company leverage to forecast its profitability in term on return on assets. Using artificial neural network with Levenberg-Marquardt learning algorithm, fixed effects model and feasible generalized least squares we proved existing relationships between characteristics of balance sheet and level of earnings. Moreover, neural network significantly outperformed standard regression models showing the

presence of nonlinearity and more complex pattern in observed data sample. NN had the lowest mean squared error value for out-of-sample prediction and provided much better fit in terms of determination coefficient. Outcomes of fixed effects model in form of estimated coefficients suggest that most significant positive influence on profitability have levels of disposable cash, retained earnings and equity ratio. In compliance with the model, both growing debt and level of inventories decrease the earnings performance. Our findings on examined sample do not correspond with familiar agency costs theory arguing that low equity to assets ratio or high leverage reduce the agency costs, encourage managers to act in favor of shareholders and increase profitability. It might be explained by persistent strong financial position of most profitable corporations in the sample which do not need to accept the risk of financial distress and finance their activity throughout retained earnings. Levels of long term investments, receivables and fixed assets are proven not be related to the company profitability in terms of return on assets. According to the presented results, we confirmed both researched hypotheses, stating that company assets structure and level of leverage influence its profitability and artificial neural networks provide considerably better return on assets estimation than standard linear methods

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# WORKING CAPITAL IN RELATION TO FINANCIAL COMPANY MANAGEMENT

*Albína KOSTKOVÁ - Sergej STRAJŇÁK*

## **Abstract**

This topic includes the analysis of single parts of working capital. It intends to find possibilities for liquidity improvement. Ensuring the liquidity of a company, means developing a suitable structure of the financial sources. This enables single parts of the equity to be retained during the process of its turnover of money from earlier than payment of the debts which cover equity. The basic aspect of liquidity management is working capital. This consists of supplies, liabilities, short term financial equity and other financial assets. Working capital is an important part of a company.

## **Keywords:**

capital, inventory, payables, receivables, liquidity, tying, consumption, return cash

## **INTRODUCTION**

Financial management is important for identifying weaknesses of a business, to allow for timely organization and avoid its negative consequences and impact. The aim of this paper is to analyze the components of working capital, with the intention to find ways to improve the liquidity of a company. To ensure liquidity, the company should be structured in a way which allows the individual components of the assets acquired (in the process of its cycle) to take the form of cash, rather than as liabilities due to the property being covered financially. One of the basic tools for managing liquidity is working capital, consisting of inventories, receivables, short-term financial assets and other current assets. To maintain the solvency of the company, there should be some working capital in liquid form.

## **1 Working Capital**

Part of the company's capital that is tied up in current assets represents working capital, i.e. property that is consumed and converted into cash in less than one year. The most important group of short-term assets are:

- supplies for manufacturing (raw materials), stocks of unfinished goods, semi-self-manufactured, ready-made produce and goods purchased for sale,
- trade receivables and other current receivables
- short-term financial assets, that is to say quick cash in a bank account in the treasury, which is part of most liquid assets. A separate component of short-term financial assets as well as short-term marketable securities

(bills, commercial papers, treasury bills, etc.), briefly held other securities (bonds, stocks) as well as valuables.

Other current assets and accruals (accrued expenses - rent paid in advance, deferred income - the work done so far and payments which were received).

Working capital in practice is most often used in the following meanings:

- gross working capital (Gross Working capital) - these are all current assets which are used within the enterprise.

Net Working Capital (Net Working capital) - the difference between gross working capital and short-term liabilities, which says:

- $\text{Work on capital} = \text{current assets} - \text{current liabilities}$

The measure of liquidity for the company is working capital, which is close to the normal follow-up of liquidity, which in turn indirectly reflects the size of working capital.

The determination of the need of working capital in enterprises is to be noted what is given to the needs of it is commitment in the individual components of current assets.

The need of capital tied in current assets is given by:

- Volume of business activity
- Operating costs,
- Time commitment of capital in various stages of cycle.

Need for a work of capital in the enterprise can be determined on the basis of duration of cycle phases, current assets and the expenditure to be made in these phases.

Net working capital reflects what portion of current assets are financially covered resources that an enterprise has long been a disposal, thus it allows us to separate the current assets are part of cash that is used to pay liabilities of the part which is relatively free and can be disposable financial resources. The importance of this indicator highlights the fact that in some countries, parses the statements concerning the production and use of working capital.

If the net working capital has a low value, it means that the permanently bound portion is covered by supplies of short-term capital, threatening the liquidity of the company.

A negative value of net working capital means that a portion of the asset is covered by short-term capital. This situation is critical in terms of corporate liquidity.

High levels of net working capital reduces the return on equity business. In this case, the unnecessary long-term commitment of resources for the enterprise acts as a more expensive way to finance short-term funds.

Each entrepreneur is trying to put a cash flow in place as soon as possible, so follows the flow of funds from the time they used to purchase stock for the moment of collection of receivables from customers.

The working capital management is an effort to reduce the inventory and the number of borrowers and to ensure the quickest possible flow of cash into the company. In this context, it is necessary to monitor the circulation time inventory, accelerate the circulation time, in particular by providing supplies or extending credit to customers. According to the financial profitability is improving, but the slow cycle of working capital, so goods are no longer tied to the stock, but the entrepreneur has no cash available for reinvestment, which often leads to further limit the purchase of supplies and running costs. This demonstrates the need for rational business management of stock.

## **1.1 Inventory management**

Inventory management determines the necessary amount, structure and quality of supplies so that they are in the right place at the right time, with minimum cost. The inventory management is to ensure that the necessary level of reserves are met, for the smooth running of the business regarding customer requirements and to minimize the commitment of capital stock. To meet customer requirements, it is necessary to maintain high inventory levels. Minimizing the capital commitment in stock assumes a low level of stock. Inventory management should be carried out in order to optimize the entire value chain in the business of buying-on-sale. It is necessary to provide particular types of stock in such amounts and structures that meet the needs of production and non-production. It also needs to meet consumer needs at an acceptable standard and timely manner with minimal cost.

Stock is an essential part of the business assets, suggesting that an excess may reduce company profitability in two ways:

- net profit is reduced by the costs associated with maintaining inventory, t. j. insurance, taxes, storage, wear, damage and interest if the company borrows to fund specific reserves,
- Total assets were increased by the amount bound in the stocks, thus reducing the turnover of assets, because the company must give opportunities to invest in other productive assets. In any case, the result is a reduction in net profit return

The impact of the inventory on the company has the following financial indicators:

Profit - the additional costs associated with the existence of stock increasing the amount of corporate costs by up to 10%, and thus reducing the amount of profit.

ROI (Return on Investment) - the total return on capital employed - the profit is the second most important indicator of economic performance of a company. It indicates the capital appreciation that was bound in the company.

Inventories affect ROI from both sides, from the cost of the capital. High inventories lead to increased cost and size of capital invested and thus cause a reduction in the value of ROI.

$$\text{ROI} = \text{net income} + \text{interest} / \text{total invested capital}$$

ROE (Return on Equity) - return on equity - even if the stock company financed from foreign sources, high inventory levels resulting in higher costs and thus produce lower profits. Thus, increasing inventory reduces the return on equity.

$$\text{ROE} = \text{net profit} / \text{equity}$$

Liquidity - the return on equity - the fact that the stock is at least part of the liquidity of the current assets, leads stock in the event of a particularly swift reduction in liquidity.

Cash flow - Cash flow Cash, reflecting the gain or loss of money in economic activity, t. j. creation and use of funds over time. Good management of stock in a company can improve business cash flow and returns on investment.

Any change in the level of working capital works not only for profit enterprise, but also affects the flow cash business. Part of the working capital of an undertaking must be in liquid form, because these funds are a guarantee to maintaining the solvency of the company.

### Claims management

The purpose of claims management is to determine the optimal level of working capital to be tied up in receivables business. The problem with debt management is to minimize the time between the occurrence and payment of claims and minimize the risk that the claim will be paid by the debtor. Efforts to minimize the time between the onset of the claim and the payment of a substantial sum, have influence on the resulting cash cycle. In particular, the need for foreign capital needed to finance the production cycle, but at the same time this can negatively affect the marketability of products. The objective of minimizing the risk of non-payment of debt is to ensure that the resulting claim was paid. Therefore, the processes to minimize the risk concentrate on the area of prevention of the outstanding debts and the recovery area after the due date<sup>30</sup>.

Prevention and effective management of claims  
The claim by the debtor is repaid when due and the lender creates problems and additional costs.

Often they become bad debts. The risk of such claims should be minimized in the following phases:

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<sup>30</sup> LANDA, M. 2007. *Finanční plánování a likvidita*. Brno : Computer Press, 2007.

- pre-contractual (business customers do not all evaluate the same, so choose a differentiated approach. The difference is whether it is a unknown customer, or if the business has had experience with the customer before. The customer's financial situation is constantly changing however, hence the permanent and regular monitoring)
- the contract (the contract should incorporate conditions that will guarantee the required payment, hence the appropriate payment terms)
- if a claim should arise (There are three stages for a claim: the time period for the payment of the claim, if the claim is payable and overdue receivables. In each of these stages it is necessary to take care of the claim. The claim needs to be evaluated as to whether any complications occurred and followed up as to whether the claim was paid or not. If the customer has a temporary liquidity problems, it is possible to reach an agreement to postpone the payment.

The standard methods of recovery include:

- telephoning,
- personal visits to customer
- reminders
- other operations that intensify pressure on the customer, for example. requirement to return the goods delivered, via legal action

It is necessary to concentrate on the first two phases regarding claims management, on the stage before the conclusion and the conclusion of the contract. Today we can see that companies pay much more attention to their debts and management, whether by their own means or through outsourcing.

#### Management raise funds

Responsive funds are the most liquid assets. The Liquid Assets include cash, balances in bank accounts and short-term marketable securities. Short-term securities occur in various forms (eg, bills, checks, treasury bills, certificates of deposit), have different performances, different liquidity and different risks.

The funds provide

- outstanding pay obligations of the current undertakings the company is involved with,
- cover for other expenses for the company,
- creation of liquid reserves
- material and financial investment. On the one hand , the funds do not produce any revenue.

On the other hand, they are to ensure the company's existence, as well as liquidity and solvency.

The main objective of management is to raise funds to prevent insolvent companies. Market players need to manage the amount of funds raised for a number of reasons:

The first reason is to have funds ready because cash receipts and business expenses do not occur uniformly during the time period and can not be perfectly prepared for; they are external factors that can affect business.

The second reason is the need to retain a reserve of funds due to unforeseen expenses or income loss as a result of a natural disaster within the company.

The third reason is to provide cash for unexpected opportunities in the market, and the temporary fall in prices of components, raw materials, or even when appropriate, the opportunity to buy another competitor or preferably invest.

Deciding on the amount of Liquid Assets includes addressing two questions: what form they should take and what is the optimal amount for these funds.

To determine the amount of finished equipment, the Miller-Orr model is used to describe the real condition of the economy.

The operating cycle of the company reflects the transformation of individual items of current assets (cash quick - material - work in progress - finished products - debt - call money). Its length is given by the sum of the turnover period of stocks and receivables. When subtracting time sales obligations from the operating cycle, the cash turnover cycle is known (turnover time of cash, cash cycle). It is a cycle, which represents the number of days, i.e. the number of days the capital of the company has been tied up in current assets.

It also concerns payment for purchased material, as well as taking receipts (from the sale of products or services).

Its calculation is based on:

- the average turnover period of stock
- the average receivables collection period,
- the average maturity for which the company must repay its debts to suppliers.

The repayment period for payment of obligations to quantify the commitment from the moment of its creation. Calculated by the formula:

The terms of repayment liabilities = liabilities \*365/sales

Cash cycle = inventory turnover + receivables collection period - the time of payment obligations by the supplier

The cycle of money turnover is therefore the period for which the company gets money back to put into production.

When the cycle is shortened, the company will quickly return funds, which generally increases the rate of return on the company and reduces the need for capital.

When the cycle is extended, reducing the rate of return increases the risk of insolvency and threatens the company's liquidity.

The cash cycle reflects a gradual process of investment in current assets in the transition of the product, in different stages of the operating cycle. The capital is spent evenly throughout the cycle (from material suppliers to the payment of debt collection), when the invested capital returns.

Cash turnover cycle includes:

1. First for the inventory turnover, which reflects the average time for which they make their inventory cycle. Calculated by the formula

$$D_o = \frac{\bar{Z} \cdot d}{O} = \frac{\bar{Z}}{\frac{O}{d}}$$

where:

d - number of days in the period

Do - inventory turnover

2. time of collection, which defines the time that elapses between the billing and collection of products,

3. payment grace period - the time between purchase of materials, services and payment for them - reducing the turnaround cycle for money.

PURCHASE	SALE	INKASO
Inventory turnover	Debt collection time	
15 + 8 + 7 = 30 days supply – production – expedition	20 days	
Time delay payments	Time commitment of capital in current assets	
10 days	40 days	

Cash cycle = inventory turnover + debt collection time – time of payments obligations by the suppliers = 30 + 20 – 10 = 40 days or is counted

Operating cycle = inventory turnover + debt collection time = 30 + 20 = 50 days

Cash cycle = operating cycle – The maturity of a liability (accounts paymen) = 50 - 10 = 40 days

Question, how much should be invested in current assets, is equal to how much should be invested in a money cycle. If you multiply the length of the cash cycle and the average daily investment in current assets at a total capital needed to

finance the cash cycle, and thus the financing of current assets, regarding the financing of working capital.

## Conclusion

Working capital is part of the company's capital tied up in current assets. Current assets are relatively less stable and its financial backing always needs sources of funding for immediate use. Therefore, the financial policy of the company should be: to address fundamental questions about the business needs for working capital, the optimal structure of current assets, where the capital is bound and from which funds the necessary capital can be obtained. The lower the value of working capital, the more problems that can arise in the business. With the acquisition of funds related to the efficient management of current assets. Inventory management involves two contradictory requirements. On the one hand, an undertaking must be a level of inventory to ensure customer orders and on the other hand, and should keep the stock at the lowest level because it increases costs. An important part of working capital is company claims. The amount of receivables and their collection rate has an effect on its liquidity, which is one of the main financial goals of the enterprise. Status and development of claims reflects the payment discipline of customers, so management must review the claims made against customers by providing business loans and then deal with the care of the claim, because only thus can they ensure their payment.

Another important component of current assets is the call money (cash, current accounts in banks, short-term marketable securities). To raise money management used different methods that are based on past experience, the operational plans, cash flow, to decide on the optimum level. To determine the structure raise funds models are used - Baumolov and Miller-Orr. The management raise funds is to prevent corporate insolvency.

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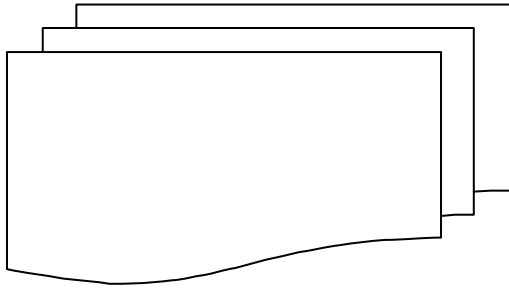


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